Children & Gardening

Washington Park Arboretum Bulletin

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Washington Park Arboretum

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Concerning Children —

ONCE upon a time, some children brought their adults to Washington Park Arboretum (WPA). It was a wonderful place, and there were many plants to see, smell, and know. And there was so much to understand that the grown-ups often found themselves keeping only about two steps ahead of the many questions that came forth.

You may find yourself in this story, because keeping two steps ahead is often the nature of learning and teaching. Adults frequently are called upon to answer children's questions on subjects new to both of them. This issue of the Bulletin is for those of you who may be proficient in accounting or secretarial work, homemaking or building airplanes, yet need more information to acquaint children with the joys of woody plants, gardening, and nature.

In this issue, staff members, volunteers, and friends of the University of Washington and The Arboretum Foundation help you choose learning experiences of interest to adults and children, alike.

Although the arboretum is 200 acres, you'll also discover how to extend horticultural learning past WPA boundaries with other programs in western Washington. In fact, The Arboretum Foundation is taking the arboretum itself on the road. One example is a program that begins soon, "Branching Out," coordinated by Leadership Tomorrow, a volunteer organization of civic leaders. These volunteers will collaborate with Seattle's Central District leaders and the Yesler and Garfield Community Centers in the "Kids' Place" after-school programs. Children will learn how to plant seeds and divide plants while their interest in nature and horticulture grows.

All seasons are magical at WPA. Introduce your kids and their friends to the wonders to be found in this "museum without walls." We look forward to serving you and helping you every step of the way in the Washington Park Arboretum.

Jan Silver, Editor, Washington Park Arboretum Bulletin

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The Washington Park Arboretum is administered cooperatively between the University of Washington, its Center for Urban Horticulture (CUH), and the City of Seattle Department of Parks and Recreation. The programs and plant collections are a responsibility of CUH.

The Washington Park Arboretum is a living plant museum emphasizing trees and shrubs hardy in the maritime Pacific Northwest. Plant collections are selected and arranged to display their beauty and function in urban landscapes, to demonstrate their natural ecology and diversity, and to conserve important species and cultivated varieties for the future. The Arboretum serves the public, students at all levels, naturalists, gardeners, and nursery and landscape professionals with its collections, educational programs, interpretation, and recreational opportunities.

The Arboretum Foundation is a non-profit organization that was chartered to further WPA development, projects, and programs through volunteer service and fund raising. Its mission is to ensure stewardship for the Washington Park Arboretum, a Pacific Northwest treasure, and to provide horticultural leadership for the region. This stewardship requires effective leadership, stable funding, and broad public support.

Children & Gardening

Learn as You Teach

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COVER: Ashley Berger, daughter of landscape architect Tom Berger, at the door of her garden playhouse. See story, page 26. *Tom Berger.* TOP LEFT: Pink locust, *Robinia* × *Idaho. Joy Spurr.* LEFT: Witch hazel, *Hamamelis* 'Diane'. *Joy Spurr.* ABOVE: In Washington Park Arboretum. *L. Nagie.*

Exploring the Arboretum with Children

Learn as You Teach

by Sheila Taft

Sometimes the only person in your house who remembers sixth-grade botany is your current sixth-grader. So how do you explore the Arboretum with children using the knowledge and talents that you have? Do what we all do, and learn as you go.

One way to keep a step ahead is to practice looking at plants in your garden through the eyes of a sixth-grader before you take children to the Arboretum. What are the plants doing—right now? Describe, out loud, what you see. Trained Arboretum guides are adults who have learned how to see. You can do it, too.

Arboretum walks offer families and classes a chance to look at their environment. The children can touch, smell, and observe the plants and take home leaves or seeds that have fallen. They can explore side trails and run through the autumn leaves. Walks also offer the adult a chance to model enjoyment and respect for the environment.

The Arboretum offers a fascinating look at nature at work in the middle of a major city. It is a marvelous area in which to discuss or teach how plants and animals live together with mutual benefit, how humans fit into this picture—for better or worse—and how important it is to keep the plant and animal kingdoms as healthy as possible. Visit often. Adapt the activities below to different learning ages and stages. Your enjoyment will be infectious.

TOP: Volunteer guide Sheila Taft starts a tour of North Beach School fourth graders, across from Graham Visitors Center. *Joy Spurr.*

RIGHT: Collecting leaves in WPA. *L. Nagie.*

Preparation for Adults: Looking at Plants

There are thousands of plants in the Arboretum. Would it be hard to learn thirty of them? How do children learn all the names of the people in their school classroom? People we meet have different characteristics. After a few weeks we can recognize individuals just by the way they walk. Can you tell a maple from an oak, or a fir from a pine tree (without reading the label)?

What do you see when you look at a tree or shrub? What characteristics can you count on? It will have a shape. It may be rounded with up-stretched arms like our native bigleaf maple, or it may be triangular like many oaks. Is the bark rough, smooth, ridged, or with circular patterns? Each tree's bark has a distinctive look. It will have leaves, except perhaps in winter. What shape are they? Are they tough like an evergreen or fragile? Does it have needles? Fir tree needles grow separately on the twig, and pine tree needles grow in clusters of two, three, or five. Count them. Does the plant have lovely fall color?

Explore Plants with Children

Find and identify one or two common plants today and on each trip to the Arboretum by reading the labels.

How often can you find the plants you are looking for on your walk? Write them down. You can build up quite a list. Take a free weekend tour (every Saturday and Sunday at 1:00 p.m., starting from Graham Visitors Center), and ask the guide to identify a few common trees and shrubs.

Identify these basic plants:

- bigleaf maple
- Douglas-fir
- salal
- western red cedar
- cherry tree
- rhododendron or azalea
- western hemlock (pictured above)
- witch hazel

Preparation for Adults: Birds, Mammals, and Other Animals

Foster Island is a bird sanctuary at the north end of the Arboretum. Children can observe birds quite closely here. It is a good place to teach elements of bird watching, including moving quietly and slowly, watching birds land and take off from the water, and observing webbed feet and colorful plumage. Bring a copy of your bird identification guide book on your Foster Island trip. You can also buy the list of WPA birds in the Graham Visitors Center gift shop.

Squirrels can become quite tame during picnic season. Sometimes they strip cedar bark for their nests. They also collect many nuts for winter storage.

Just one small mole can be responsible for the whole trail of hills you see in front of you. Moles are one of the world's most efficient digging machines.They dig tunnels beneath the surface in their search for worms, grubs, and beetles to feed their young, who are in a safe den underground. Adults are almost blind but have wonderfully sensitive noses and ears.

Native slugs help remove debris from the forest floor and are eaten by birds and small animals. They are important.

If there is a mole hill, slug, beetle, spider, or dead anything in the area, the children will find it.

Explore Birds, Mammals, and Other Animals with Children

When you leave the Graham Visitors Center, turn right at Arboretum Drive East, and head north, down the hill, where you will immediately see the lagoon area. The water and shores will be filled with ducks, geese, coots, and red-winged blackbirds. In the spring, male red-winged blackbirds defend their territory. Listen for their creaking-gate call. When they fly, notice the bright splash of color on their wings.

To attract squirrels, make a repeated loud kissing noise, and they may stop to look at you. While they are fun to watch, remember that they are wild and may bite badly if touched.

Find mole hills over the grassy areas. If the soil is dry, it is fun to sift it through your fingers.

Adult: Pick up a slug and put it on the back of your hand or onto a leaf you are holding, and watch it move. Give it a cute name and it won't seem nearly so obnoxious. Gently put the slug back, and then accept the awe and respect of the children.

Preparation for Adults: Looking at Native Plants

Throughout the Arboretum is a native matrix—the many native trees and shrubs that have grown naturally without being planted.

Salal *(Gaultheria shallon)*. Joy Spurr photo.

Explore Native Plants with Children

Across Arboretum Drive East from the Graham Visitors Center, to the left of the top step, are three of the most impressive native trees, grouped together.

1. The Douglas-fir is important for construction and for Christmas trees. Look at the deeply ridged bark, the bottle-brush twigs, and the cones with little snake tongues peeking out from each scale.

2. The western hemlock is a graceful tree with small cones. The Latin name is Tsuga heterophylla: The second word (the species) means "different-sized leaves." Look at the needles; are they different sizes?

3. Western red cedar is used for buildings and was very important to the native peoples of the region. Look for stringy bark, flat leaves, and tiny cones.

Which of these three trees is Washington's state tree? Answer: western hemlock

Preparation for Adults: Looking at Flowers

In spring and summer, the Arboretum is in glorious flower. Rhododendrons and azaleas on Azalea Way are fun to study with a magnifying glass and may have bees around them. Take a close look at the colorful flower petals; one usually shows darker spots. These spots are the "landing lights" for bees, guiding them into the nectar at the bottom of the flower.

Look at the structures in the middle of the rhododendron or azalea flower. Notice many stamens with pollen at the tips. These are the male parts of the flower (memorable because stamen has the word "men" in it). One structure looks different, the pistil (female part), and it sticks out farther than the stamens. To remember that pistil is the female part, volunteer Jan Pirzio-Biroli tells Arboretum guides: "Think of Pistil Packin' Mama."

Why does the pistil grow out beyond the stamens? The flower does not want its own pollen. The bee enters the flower using the marking as a guide, bumps the pistil, and deposits some pollen from another flower. Then as it forages for nectar, it picks up pollen from the stamens and moves on to fertilize the next flower with it. The pollen on the pistil may make its way down the tube to the base where the flower is fertilized, and the seeds will develop. Once seeds begin to form, the plant has no more use for that flower part, and it falls off. This is how an azalea reproduces.

Explore Flowers with Children

Look closely at several types of flowers, and see if you can determine how they work. Try looking at a rhododendron or azalea, dogwood, camellia, or magnolia. Find a tiny maple flower. Visit the Arboretum hives behind the greenhouses, but don't go too close: Bees may sting if they feel threatened. Buy some Arboretum honey. P.S. Did you remember to smell the flowers?

Flame azalea.

Preparation for Adults: Looking at Autumn

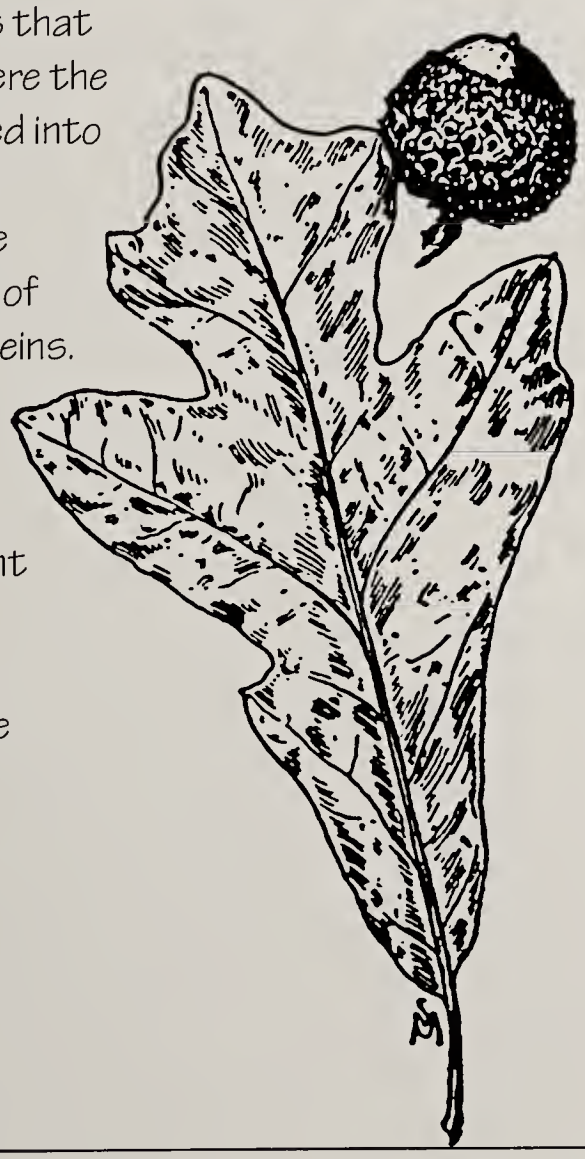
Visit the Arboretum in autumn. Look at the witch-hazel leaves in yellows and reds, the many shades of colors in the Japanese maple section, and the browns and bronzes in the oak section.

Look at an elaeagnus or maybe a beautyberry *(Callicarpa)*. The more sugars in a leaf, the redder it becomes. Our climate does not encourage all the brilliant reds of the Northeastern US, but the Northwest can hold its own with wonderful yellows and oranges. Among the changing deciduous trees are the marvelous evergreens. Does "evergreen" mean that the leaves never die? Evergreen leaves and needles have a life cycle that is longer—sometimes up to three years before they die and are replaced.

Explore Autumn with Children: Collect Leaves

Dozens of types of leaves are on the ground in fall. Find at least six kinds of oak leaves. Note that some have sharp points, and some are rounded.

Make leaf rubbings with paper and pencil. Press some leaves, and make a display or art project. Look closely at the end of the leaf stalk with a magnifying glass. Can you see the pinpoints that show where the sap flowed into the leaf? Those are the ends of the leaf veins. There will be a scar on the parent plant showing where the leaf fell off.



Preparation for Adults: Looking at Seeds

In the fall, seeds have arrived and the parent plant is involved in getting its children to leave home. Everyone can readily understand that a thousand tree seedlings can't grow at the foot of the parent tree. So what adaptations are necessary?

Continued on page 6

Explore Seeds with Children

What is a seed anyway?

A seed is a baby plant in a package. Soak a few lima beans overnight and then take one apart, gently. Explain to children, "If we left home we would take a coat to keep warm and food to keep us going until we figured out what to do next." The lima bean has a coat that will rub off. Inside are two identical halves with some tiny structures between.

The two halves of the lima bean contain food for the tiny root and a shoot that will begin to grow once moisture is added. If a seed lands on soil, it may grow. Many seeds will not find the right conditions, so a tree, for example, will make thousands of seeds to ensure that a few will survive. What else does a seed need to grow successfully? Answer: sunlight, soil, water, air

Take apart a fallen cone.

Pick up a fallen cone. Find the tiny seeds at the base of the scales. If you dry the cones at home first, the seeds may fall out easily.

Float a coconut.

What if a plant grows next to water? Will its seeds be able to float? Try taking a coconut into the bathtub and see what happens. The results will be a hit at the next show-and-tell.

Make an acorn cap whistle.

When you wander in the oak section, try making a whistle using an acorn cap (the part left after the acorn falls out). Make a seal over the cap by centering your thumbs; leave a tiny gap between them, and blow through it. With luck and perseverance you should get a wonderful whistle (Pssst—Parents! Get an acorn cap and practice for at least two weeks before the trip and your first performance).

Seeds must leave home. What will a seed need if the wind is to help it? Will it need "wings" like the maples? How far can a dandelion seed go with its tiny parachute? How do squirrels and other mammals and birds help spread the seeds around? Answer: The nuts and berries taste good to them. They may hide them, or the seeds may be eaten and then voided later. Some may be carried in fur (or on childrens' socks and sweaters), clinging on with tiny hooks.

As the seeds develop, the trees and shrubs in the Arboretum are also preparing for winter. All spring and summer, the leaves have been food factories for the plant. You may be surprised how informed your children are about photosynthesis and oxygen production. At the very least it is worthwhile to look around at everything green, take a few deep breaths, and ponder the importance of keeping a healthy planet.

Preparation for Adults: Arboretum Word Games

Plants have many nicknames that vary from state to state and in different countries. For this reason, each plant is given a Latin name when it is discovered. That way, scientists all over the world can use the Latin name to make sure they are talking about the exact same plant.

Spot the Latin Word

Often, Latin names of plants will describe part of the plant. Children from about fourth grade on can try to spot the meaning of the following Latin words from the context of each familiar sentence. After the game, see if they can understand Latin names on some of the plant labels as you walk through the Arboretum. The gift shop at Graham Visitors Center has an inexpensive book on Latin names.

- I'm dreaming of an alba Christmas.
- I slipped on the ice and became horizontalis.
- I felt very elegantissima at the prom.
- A mouse is micro and an elephant is macro.
- Rudolph the rubrum-nosed reindeer.
- Little Ruber Riding Hood.
- Pass me the acer syrup for my pancakes, please.

Test: How would you translate Acer rubrum?

The word arboretum comes from Latin meaning tree (arbor) and place (etum). See how many words children can make from "arboretum." Ask for a copy of the Arboretum's word list at the GVC reception desk.

A samara, the winged seed of *Acer rubrum*.

Preparation for Adults: Looking at Native Botany (Ethnobotany)

The study of how native people used plants is ethnobotany. Native Americans living in the Pacific Northwest made homes, canoes, chests, and clothing from cedar. Much further north, totem poles were carved with it. Native people also mashed salal's blue berries and dried them like fruit leather to be used during the winter. Salal appears all over the Arboretum: It has tough leathery green leaves and white bell-like spring flowers.

Bigleaf maple wood was carved into bowls and its leaves could cover food. Without grocery and department stores or pharmacies, native people found what they needed in the plants and animals around them. Willow bark, for example, was used to provide a pain killer. It contains salicylic acid or aspirin as we know it today.

Exploring Ethnobotany with Children

Can you imagine living around the Arboretum two hundred years ago?

What would you use for something sweet to eat? Answer: berries

How would you keep warm in winter? Answer: cedar homes, furs, fire, animal fat, fish oil

What could you use for baby diapers? Answer: moss or the finely pounded inner bark of cedar

Some plants are very poisonous: How would you learn which ones to avoid? Answer: from your parents and other adults

What other things that you need in order to live can you find around the Arboretum? Answer: The children will come up with their own replies.

Lead Your Own Arboretum Tour

by Sheila Taft

Take along:

magnifying glass • plastic or paper bag for collecting • binoculars • eyes, ears, nose, fingers, and feet

Sometimes, you may want to take children around the Arboretum without using a tour guide. To prepare, call the education office in advance, and staffers will send you a map and other information. Groups of more than ten should schedule their self-guided tour with WPA at (206) 543-8800.

You can further enhance your adventure by reserving an Explorer's Pack, which contains many articles you may find useful.

Tour the Winter Garden, the Woodland Garden, Azalea Way, and the Oak Section

This circular tour takes under an hour. Children can explore the ponds, see a wide variety of trees and shrubs, and in the spring and summer enjoy a mass of flowers and scents. They can collect seeds and leaves in fall on the paths. Between December and March, they can visit the Winter Garden monthly.

Rhododendron macrophyllum

Get a map at the Graham Visitors Center. The volunteer at the information desk can trace this tour on it.

Start at the west side of the Graham Visitors Center, cross Arboretum Drive East, and take the path to the left of the steps. Follow the path to the Joseph Witt Winter Garden and proceed into this area. The path curves around the garden. At the far side, take the path that leads downhill to the stream.

At the bottom of the hill, turn left and walk until you almost reach Arboretum Drive East, to visit the upper pond. Then return down the hill, and cross the stream at the little bridge. Keep going down the hill to the lower pond, which sits near the edge of Azalea Way. Although it is tempting, restrain children from throwing things into the water, and keep pets on leash so they don't jump into the newly renovated pond.

Turn right and walk along Azalea Way, a broad grassy road that leads back to the Graham Visitors Center. On the way, look for the oak section. Take one of the side paths on the left to explore the oaks, especially in the fall.

Tour Foster Island

Foster Island gives children a unique opportunity to view wetlands in a city. They can see marsh and lake life. Birds are numerous, and the plants are different in this area. Look for cattails, willows, and the bubbles of methane gas as the vegetation beneath the water decomposes.

This walk takes one to two hours. Get a map at the Graham Visitors Center. The volunteer at the information desk can trace the tour on your copy, or buy the *Guide to Washington Park Arboretum,* which contains a detailed description of the Foster Island walk.

From the Visitors Center, head downhill to the lagoon. Hugging the water, follow the path east to the gate and bridge onto Foster Island. The main path through the area leads under Highway 520 and on to the end of the Island, Lake Washington, and the Waterfront Trail. The trail wanders through the marsh areas at the edge of the lake to the Museum of History and Industry. At the museum, an outdoor cannon and an indoor soft drink machine become more interesting for a little while.

To return, retrace the route or go onto the main road, which leads back to the Visitors Center.

Sheila Taft is an Arboretum Foundation volunteer and board member. She is a certified horticultural therapist.

Educating Youth at WPA

by Dana Kirley
photos by L. Nagie

TOP: Saplings, the WPA program for grades 3–5, develops understanding of gardening and nature. Here children study leaf characteristics in the "Falling into Leaves" event. ABOVE: Children decorate and plant recycled shoes. MIDDLE RIGHT: Urban wetlands are studied and simulated. BOTTOM: "Spring Sprouts," part of the Saplings program, learn hands-on propagation of cinquefoil.

Washington Park Arboretum (WPA) provides environmental, horticultural, and conservation education for youth in the Seattle community. These education programs are designed to involve and excite students about their natural world. Using the Arboretum as a laboratory, children are encouraged to experiment, ask questions, and engage all of their senses. The goal is for each student to leave with increased environmental awareness and a new connection with nature. And, of course, everyone must have fun!

Youth education programs and resources are available year-round at WPA. Find complete and up-to-date listings in the *Youth Education Programs Guide,* published twice a year. Pick up your free copy at the Graham Visitors Center, or get on the mailing list by calling (206) 543-8800.

All tours and events start at the Graham Visitors Center, 2300 Arboretum Drive East, Seattle.

Programs

The Saplings Program

Saplings is a hands-on program designed to teach youngsters about plants and animals in their environment through interactive games, observation, and experimentation. This 1½-hour outdoor adventure challenges students to become experts on different topics each season. Preparation and follow-up activities are provided for teachers.

Grades: 3–5 (including home schools)
When: Monday through Friday, during May and October
Time: mornings, 10 a.m.–11:30 a.m. or afternoons, 12 p.m.–1:30 p.m.
Cost: free
Reservations: limited space, register early

Guided Nature Hikes

Join a trained volunteer guide for a one-hour exploration of the Arboretum. Children are encouraged to ask questions, touch, smell, listen, look, and learn through their own curiosity. Choose one of our popular topics, or let WPA design a tour suited to your interests.

Native Plants & Ethnobotany. Discover the many plants native to the Pacific Northwest, and learn how they were used by Native Americans. Practice field identification, and discuss how these plants are connected to contemporary living.

Foster Island Ecology. Explore the unique urban wetland environment of the Arboretum. Study its many habitats, plant and animal interactions, and urban stresses. Quiet observers may even sight eagles, geese, herons, waterfowl, mammals, and other resident wildlife.

Seasonal Special Focus. On a winter tour you might visit the blooming and strikingly fragrant Winter Garden. Spring tours would likely highlight propagation, wildlife, and a rainbow of flowers. In the summer, you might explore the insect world, drought-adapted plants, or summer-flowering plants, including Northwest natives. Fall will immerse you in vibrant colors, showers of leaves, and multitudes of seeds.

Grades: K–12, youth groups, families
When: year-round, seven days per week (except weekdays during May or October)
Time: 10 a.m.–2 p.m.
Cost: $5 per group of 30 or less
Reservations: three weeks in advance

Self-Guided Adventures

Explorer's Packs

Be adventurous! Lead your own group on an exploration of the Arboretum. Borrow one of the prepared backpacks full of equipment, field guides, and activity ideas that will prepare you for fun and learning. Two types of packs are currently available, and more are under construction.

Water Wonderland Pack: Take a closer look at the wetland world. With dip nets, magnifiers, an inflatable aquarium, and many other tools, you will observe and experiment with the many habitats, plants, and insects found in an urban wetland environment.

Forest Fun Pack: Collection bags, magnifiers, scavenger hunts, and leaf penetrometers will aid you in your investigation of an urban forest habitat. Study leaves, seeds, bark, and tree growth. Make an acorn whistle and play bug bingo. Have fun in an urban forest.

Grades: K–6, youth groups, and families
When: year-round, seven days per week (not available during May and October)
Time: two-hour check-out period: 10 a.m.–12 p.m. or 12:30 p.m.–2:30 p.m.
Cost: free ($50 deposit required at time of check-out)
Reservations: call to reserve a pack.

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On Your Own

If your group is unable to schedule one of the formal programs, you are welcome to explore and discover the riches of the Arboretum on your own. The WPA staff will help you plan your trip! WPA offers trail maps, driving directions, and background information on a variety of environmental subjects.

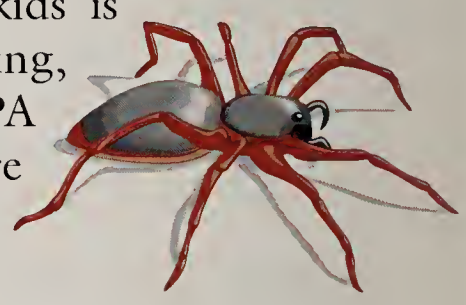
Ages: everyone (groups over 10 need to schedule their trip through the education office)

When: dawn to dusk, year-round; ask for dates and times that avoid competing groups and offer open parking areas

Cost: free

Volunteer & Learn

Help a child plant a seed, search for bugs with a scout troop, or make recycled paper with a family. Working with kids is always new, always exciting, and always fun. Most WPA programs for children are free, so the Arboretum relies on volunteers in all aspects of its education programs.



In addition to working directly with youngsters, volunteers can also help develop programs, write curricula, create educational materials, and assist with marketing. Training is provided when needed. If volunteers are creative, energetic, and fun-loving, WPA hopes they will become education volunteers.

Volunteer information (call the education coordinator): (206) 543-8800, Monday through Friday, 10 a.m.–4 p.m.

More Seattle Resources for Children

Tree: Teaching Resources for Environmental Education is a guide to help you teach children. Consult it after you determine audience, the environmental issues to be addressed, and the types of resources needed to teach them. *Tree* is published by Department of Housing and Human Services Office for Education with the Environmental Education Committee, an interdepartmental team of the City of Seattle. For a copy, call City of Seattle environmental education coordinator: (206) 684-0570, Monday through Friday.

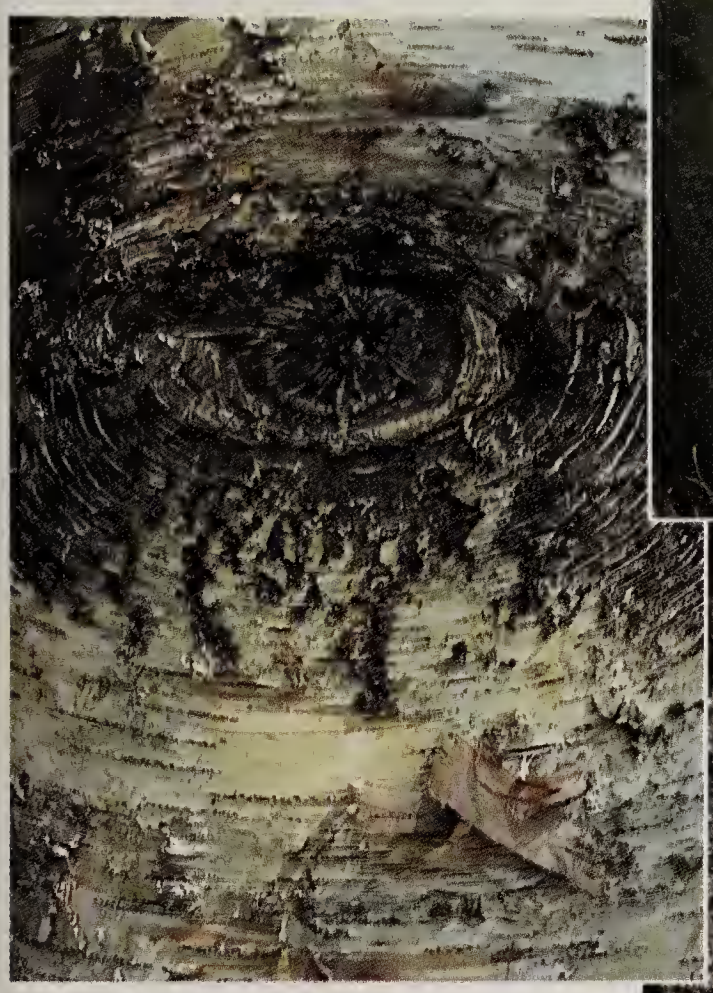
Dana Kirley is WPA's education coordinator.

Teaching about Trees is Kids' Work

text by Sue Moss and photos by Joy Spurr

Kids love to come to the Arboretum. Just to be in a big green space is enough to free their souls and uplift their spirits. But what if you also want to give them the gift of seeing, of knowing more about the treasures that dwell in this wondrous outdoor museum?

Since the Arboretum is first and foremost a tree place, consider some activities that will increase their powers of observation and knowledge of nature's giants while leaving the environment undisturbed.



Barks to see at WPA:

TOP: Chinese quince *(Pseudocydonia sinensis)* bark. LEFT: White birch, *Betula jacquemontii.* BOTTOM: Bigleaf maple, *Acer macrophyllum,* a native Northwest tree. RIGHT: Fuzzy bark of windmill palm, *Trachycarpus fortunei,* at the south end of the parking lot near Graham Visitors Center.

Engaging in planned activities can double the fun of being here. None of these activities require elaborate equipment.

Learning about Trees

Usually, when you think of trees, you think of leaves and branches, of their great size, and of their flowers. Rarely do people think of the most accessible part of trees—their trunks. Trunks are thin or wide, wrapped in bark, and are diverse and fascinating. Bark covers the tree like a skin, protecting it from disease, insect damage, and harsh weather. Some are thin as paper, such as the beech tree, while the giant sequoia's bark is up to two feet thick. Each type of tree has distinctive-looking bark that will tell you just which tree you are seeing, without even looking up!

Bark-Scouting Walk

The easiest activity, needing no props, is a "bark-scouting" expedition. This kind of activity works well in the Arboretum, because there are so many different trees in one area. It can be done any time of year.

Ask the children to observe color: Are all trunks brown? Don't you see yellow, green, red, and white, too? What other colors? Touch the bark of many different trees. Is it all smooth? Can you find hairy, fuzzy, ribbed,

scaly, peeling, or other textures? Describe other textures as you find and observe them. What about scent? Do all the barks smell the same?

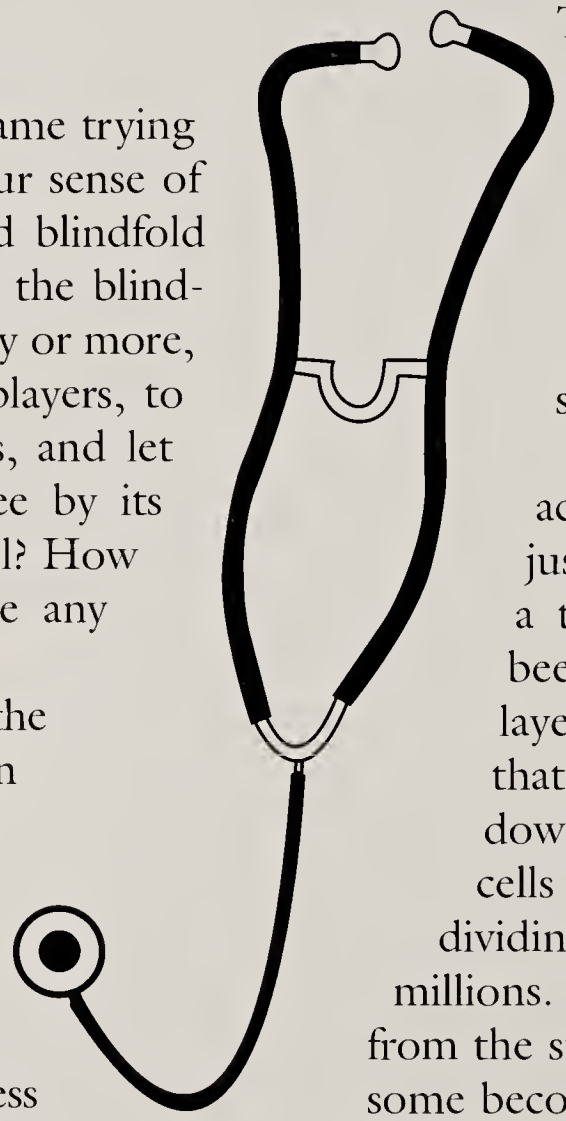
As children choose a tree, ask them to observe bark color, texture, and any growths. Young trees will generally have smoother bark than old ones. Branches, being younger than the trunk, will often be smoother.

Some particular trees with outstanding characteristics include the black locust with nearly black bark that, with age, becomes corded with ridges that look like they have been braided. Young cherry trees have dash marks, called lenticels, around their trunks in bands that become rough and enlarged with age. Bitter cherry has brown bark with orange lenticels, while birch-bark cherry has beautiful, smooth, shiny copper-colored bark. The striped maple has green and white stripes that go up and down (see page 15). Some birches are pure white, while others have a lot of black patches. Cork oaks have dense bark that is, well, corky in texture.

Hug a Tree

You might want to play a game trying to identify barks using only your sense of touch. Kids should pair up and blindfold each other one at a time. Take the blindfolded person 20 to 30 feet away or more, depending on the age of the players, to find the trunks of several trees, and let him/her get to know that tree by its bark. How does it feel and smell? How big around is it? Does it have any growths, etc.?

Prompt kids by asking them the above questions, so they learn how to really get to know a tree when blindfolded. Lead the blindfolded person back to the starting point via a circuitous route, take the blindfold off, and ask the child to guess which trees were experienced.



Make a Bark Rubbing

The bark of a tree must never be damaged. If it is, the tree might die. But you can make a bark collection by taking rubbings, just like the brass rubbings done on tombs in England and manhole covers in US cities.

Tape a light-colored piece of paper (experiment with color and thickness) to a particularly pretty section of the trunk. Using the long side of a wax crayon, rub up and down over the paper, pressing firmly. Keep going until the pattern comes through clearly. Try making rubbings with different trees, and observe the different patterns. Find out the tree's name from the label. Then label each drawing and perhaps mount it for display or gift giving.

Listen to the Tree with a Stethoscope

Your group can get to know trees on an even more intimate level by using the sense of hearing. Did you know that you can hear a tree grow? The tree sap flows up into the tree as it surges awake from its winter slumber. If you come to the Arboretum in the early spring with a stethoscope, you can listen to the heartbeat of the forest.

You can hear the crackling, gurgling flow of life most easily in thin-barked deciduous trees that are at least six inches in diameter. Press your stethoscope firmly to the trunk. Try not to move, so you don't make interfering noises. You may need to try several spots on the tree to find the best listening post. Compare your tree's sound with human heartbeats by having children listen to each other's hearts with the same stethoscope.

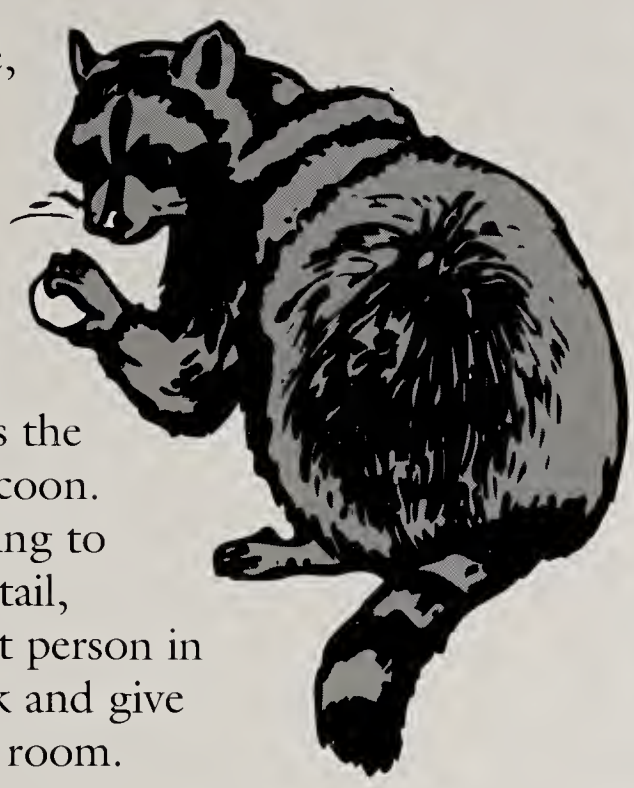
Explain to children about how the active life processes of a tree happen just under the bark, no matter how big a tree is. This is what you have just been hearing. The cambium or inner layer of the bark consists of living cells that carry water and nourishment up and down the tree from spring to fall. The cells of the cambium layer are constantly dividing and producing new cells by the millions. These cells die when they are cut off from the supply of water and sap. When dead, some become the outer bark and form protection for the tree; the others form a ring of heart wood annually. The oldest bark is on the outside.

Playing among the Trees

If you are here with a group that needs to let off steam, there are several fun games to try.

Catch the Raccoon's Tail

The tie-in, of course, is that the Arboretum is home to many creatures, including raccoons. Although you don't see them during the day, they live in hollows in old trees and in their branches.



Have your kids form a line, placing their hands on the waist of the person in front of them. The first person in line is the head of the raccoon. The head is going to try to catch its tail, which is the last person in line. Stand back and give this one lots of room.

Tree Ballet

Another activity for the great outdoors is to create a tree ballet. Suggest to the children that they use their bodies to mimic the shape of a tree. Tell them to add motion to the tree as it would respond to a light breeze then to a big wind and finally a ferocious storm. By doing so, they can choreograph a tree dance.

Have fun. Enjoy the Arboretum with kids. No kids? No matter. These same gems and exercises are just as fun and revealing for adults. Many are being used today to reintroduce grown-ups to the touch, feel, and scent of nature.

More Activities for Children

Burnie, David. *Tree.* Eyewitness Books. New York: Alfred A. Knopf, 1988.

Caduto, Michael, and Joseph Bruchae. *Keepers of Life: Discovering Plants through Native American Stories and Earth Activities for Children.* Golden, CO: Fulcrum Publishing, 1994.

Cornell, Joseph. *Sharing Nature with Children.* Nevada City, CA: Dawn Publications, 1979.

Diehn, Gwen. *Nature Crafts for Kids—50 Fantastic Things to Make with Mother Nature's Help.* Asheville, NC: Altemont Press, 1992.

Ocone, Lynn, and Eve Pranis. *Youth Gardening Book.* Burlington, VT: National Gardening Association, 1987.

Sue Moss is a garden designer and member of The Arboretum Foundation.

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A Child's-Eye View of WPA

by Dustin Cho, Spencer Easton, Molly Molvik, and Eva Wingren (kids) and Valerie Easton (adult)

Jan Silver and I, equipped with a tape recorder, camera, and note pad, brought a group of children to the Arboretum several times, in different seasons. Dustin, Spencer, Molly, and Eva are nine- and ten-year-olds from North City Elementary School.

We stood back (eventually) and encouraged them to explore, touch, and comment on all they observed. Being an active and verbal bunch of kids, our job was mostly to stay out of the way, as the kids ran, jumped, crawled, and sniffed their way through the Winter Garden, the Japanese Garden, Azalea Way, the Waterfront Trail, and Foster Island.

Left to right: Spencer, Eva (front), Dustin and Molly.

They looked up at the sky and trees, examined the ground in close-up, never asked about a scientific or "real" name of a plant, moved through space (and no doubt time) in a way long forgotten by adults, and enjoyed their explorations tremendously. Here are selections from the writings, words, and photographs about the story of their Arboretum experience.

Photos on this page by Jan Silver

In the Japanese Garden...

"I felt like I was floating through a dreamland." – Dustin

"I especially like the big pond when all the fish came up to us because they wanted food. My favorite time was when we walked on the rocks above the water." – Molly

"I'd like to live in this garden— it is cozy. And on Sundays I'd open it to the public." – Spencer

In the Winter Garden...

Stachyurus praecox (right)

"It looks like it is raining but standing still." – Dustin

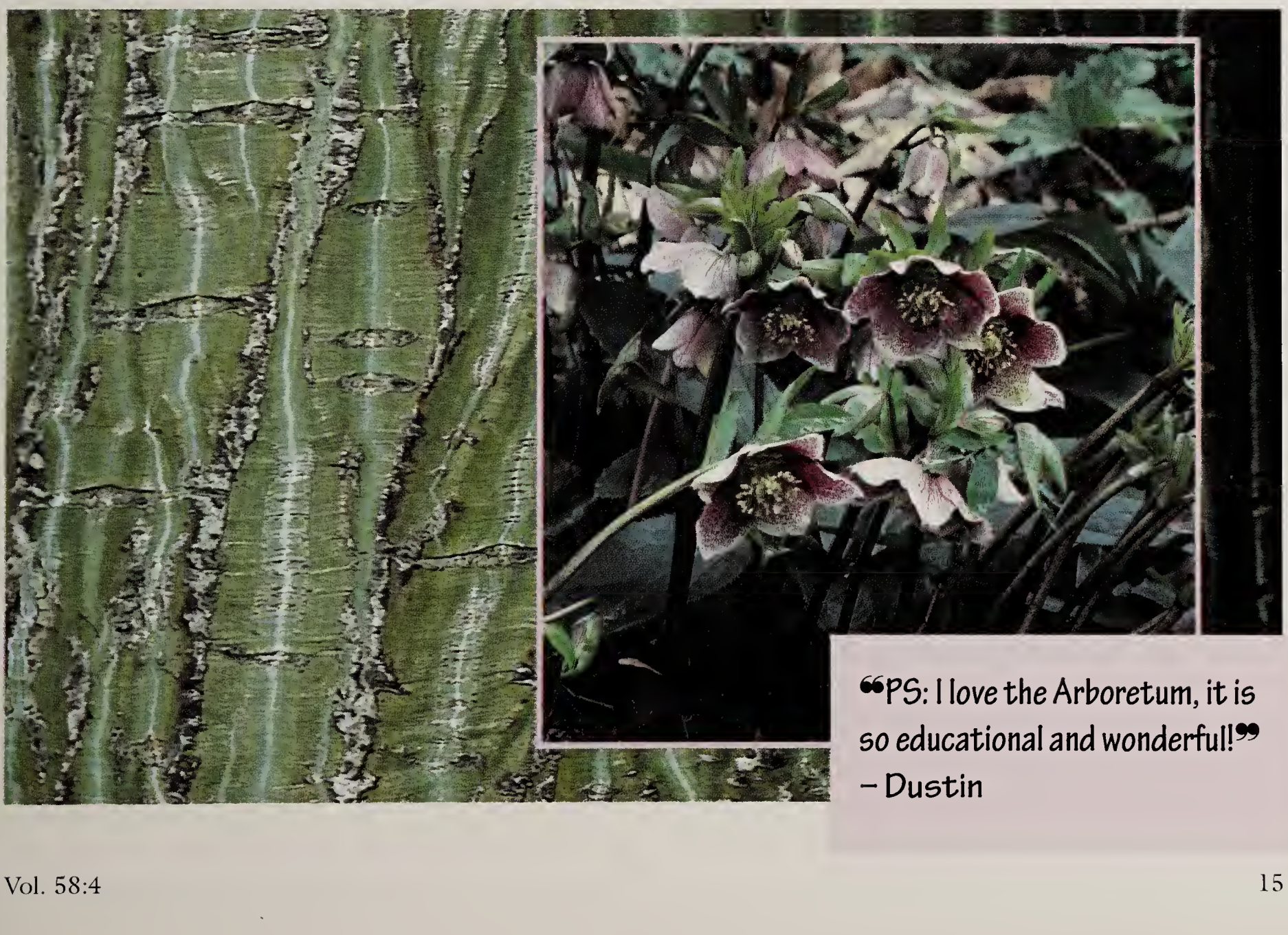
About Mahonia 'Arthur Menzies'

"That plant is so proud of its flowers that it holds them up really high." – Spencer

"I'd choose the stripe-bark maple and the Victorian-purple hellebores [see both below] for my garden, so I could make some really cool wallpaper." – Eva

Places that Eva would return to: Japanese Garden, Winter Garden, Azalea Way, Foster Island, the cannon at Museum of History.

"I think the Arboretum in winter was very impressive with all the colors, smells, feelings and sights" – Molly



Photos by Joy Spurr

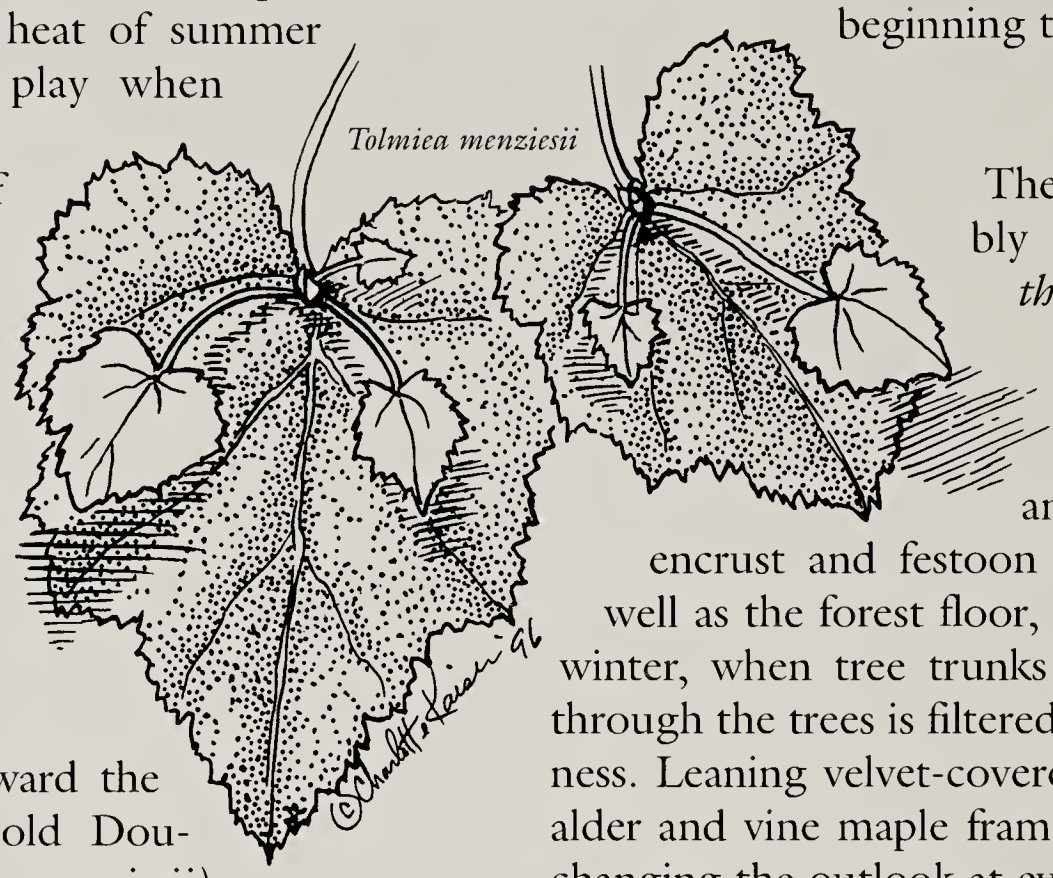
"PS: I love the Arboretum, it is so educational and wonderful!" – Dustin

Old Sauk River Walk

Native Plant Hike

by Joan Burton with illustrations by Charlotte P.G. Kaiser

A lowland, level walk along the Sauk River bed is a Hansel-and-Gretel wonderland, easy enough for small children or handicapped walkers, yet luminously lovely all-year round. Deep forest trail skirts white-water vistas then meanders around side streams, pools, and ponds where in the heat of summer children can safely play when supervised.



The Sauk is one of Washington's National Wild and Scenic rivers, constantly changing its channel. Yet, this trail along its banks is often overlooked as a family hike. The forest is a magical study in shades of green.

Begin walking toward the river bank through old Douglas-fir *(Pseudotsuga menziesii)*, western hemlock *(Tsuga heterophylla)*, western red cedar *(Thuja plicata)*, red alder *(Alnus rubra)*, vine maple *(Acer circinatum)*, and bigleaf maple *(Acer macrophyllum)*. Tell children the area was logged in the early part of the twentieth century. A few remnant giant Douglas-firs remain, and occasional cedar stumps with notches cut from their bases tell the story. It is not an ancient forest, but the characteristics of a climax fir and hemlock forest are beginning to emerge.

Winter

The mosses are probably cattail moss *(Isothecium myosuroides)* and goose-necked moss *(Rhytidiadelphus triquetrus* and *R. loreus)*. They encrust and festoon every tree limb, as well as the forest floor, in a thick carpet. In winter, when tree trunks are bare, the light through the trees is filtered through the greenness. Leaning velvet-covered trunks of slender alder and vine maple frame views of the river, changing the outlook at every step.

Spring

The new fronds of sword fern *(Polystichum munitum)*, deer fern *(Blechnum spicant)*, and lady fern *(Althyrium filix-femina)* emerge from the moss in late April, along with tiny white forest flowers: foam flower *(Tiarella trifoliata)*, youth-on-age *(Tolmiea menziesii)*—a popular house plant sold as the piggy-back plant—and vanilla leaf *(Achlys triphylla)*. The scarlet flowers of salmonberry *(Rubus spectabilis)* can be seen at this time, as can thimbleberry *(Rubus parviflorus)* blossoms.

Look for vanilla leaf. Bunches were used by Native Americans as an insect repellent; even after the leaves have dried, they give off a sweet vanilla scent. They also called this plant "sweet after death" and used it to wrap fish.

In early spring, children can look for the gelatinous masses of frog eggs in puddles and backwater pools along the way. If they look closely enough, they can see tiny tadpoles moving in their sacs.

Length: day hike consists of two-mile loop, but trail extends three miles

Level: easy for children and adults; elevation, 600 feet; no elevation gain

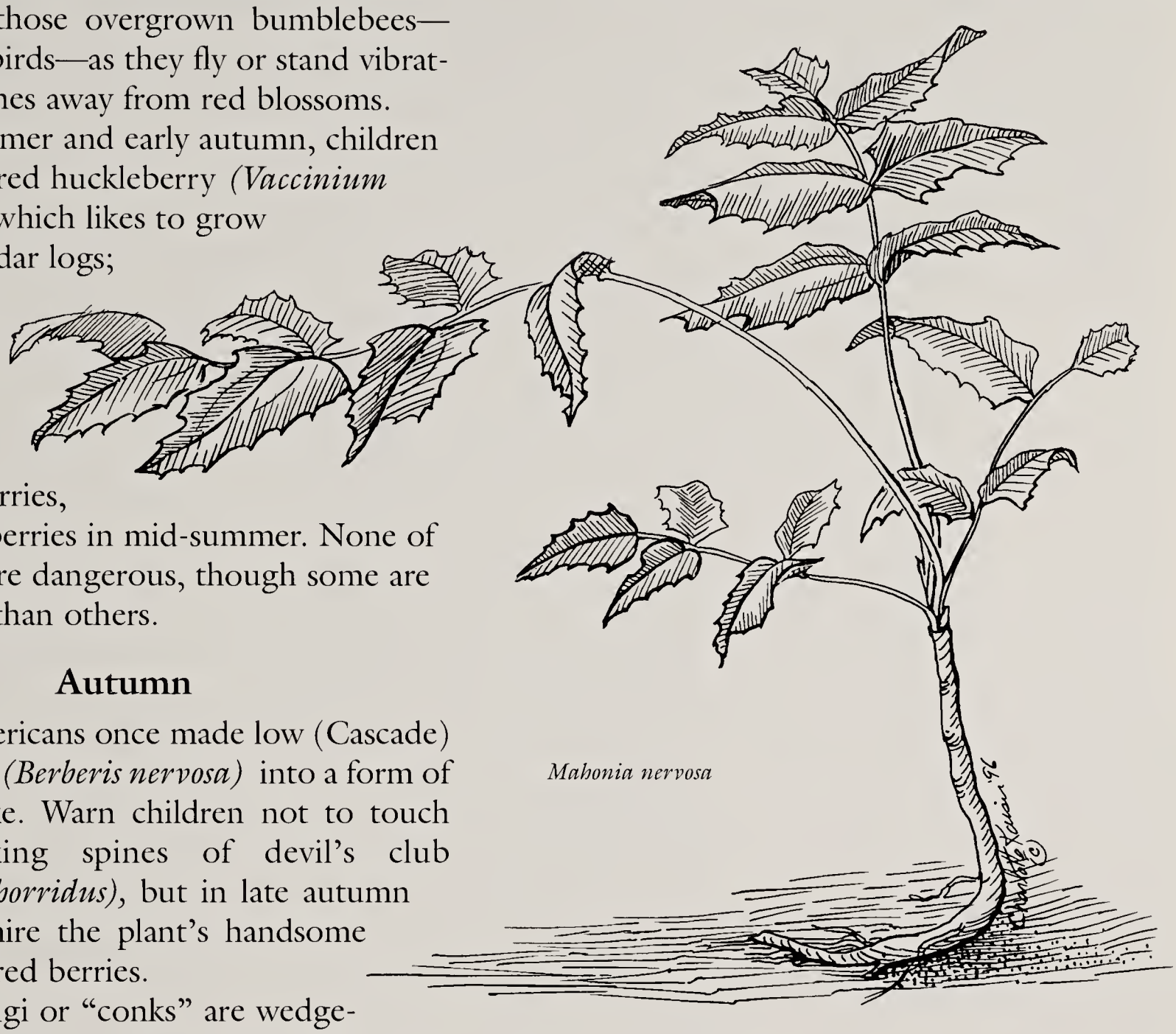
Access: all year

To get there: Drive I-5 north to Exit 208, then go east on State Highway 530 or 20 past Arlington to Darrington. Follow signs for the Mountain Loop Highway, which becomes Road No. 20. Follow Road No. 20 along the west side of the Sauk River for 3.3 miles from Darrington to the trailhead sign on the left, marked Old Sauk Trailhead. There is also an unmarked trailhead and pullout two miles down the road. Both pullouts have ample parking. You may walk the trail from either end, and if you walk it as a loop, you may choose to return along Road No. 20.

Summer

Look for glossy dark green leaves on tiny, trailing vines and in mid-summer the dainty pink twinflowers *(Linnaea borealis)*. The blossoms rise in pairs and have a delicate fragrance. Tell children that Linnaeus, the botanist who classified all the plant kingdom, considered this flower to be his favorite and it was named for him because he loved it so. On hot summer days in late spring and early summer, children can look for those overgrown bumblebees—the hummingbirds—as they fly or stand vibrating on air, inches away from red blossoms.

In late summer and early autumn, children can watch for red huckleberry *(Vaccinium parvifolium)*, which likes to grow in decaying cedar logs; salmonberries, with their summer salmon-colored fruit; and thimbleberries, with soft red berries in mid-summer. None of these berries are dangerous, though some are better tasting than others.



Mahonia nervosa

Autumn

Native Americans once made low (Cascade) Oregon grape *(Berberis nervosa)* into a form of pemmican cake. Warn children not to touch the evil-looking spines of devil's club *(Oplopananx horridus)*, but in late autumn they may admire the plant's handsome candelabra of red berries.

Bracket fungi or "conks" are wedge-shaped growths with a hard, dark upper side and a soft, cream-colored underside. They extend out horizontally from the trunks of dying Douglas-firs. Children will like to discover that they can make a mark in the soft undersides of the fungus, and that the writing will remain visibly darker.

Beautiful and varicolored lichens spread over the white bark of the alders. Some leathery green lichens, such as freckle pelt and lungwort, lie loose on the forest floor. Tell children they are considered delicious salad by deer and elk. A particularly spooky pale-green lichen called common witch's hair hangs from the branches of trees in a tangled mass of wispy pale gray-green. Children can collect some of the strands for Halloween.

The level trail winds through the forest to provide close views of the river. The only sound is the rush of the water plummeting over semi-submerged rocks, splashing, rushing, and cascading. Outspreading elderly bigleaf maples shade the trail from the sun's brunt until late afternoon. This trail gains very little elevation in the three miles it follows the Sauk River, and the tread is smooth and well-maintained.

The Sauk is one of the tributaries of the Skagit. It has changed course many times over the years and has recently eaten away the banks, so the trail has been rebuilt (as recently as April 1996) to accommodate this temperamental river. Children will enjoy speculating about how high it gets during flood time, and how it deposits its load of logs and stumps. After the walk along the bank, children will enjoy the drive back along the lower river.

Joan Burton is the author of *Best Hikes with Children,* volumes one and two. She is a long-time member of The Arboretum Foundation.

Read about a child who grew up to be the Northwest's leading native plantsman, on the next page.

Californian to Northwest Native

by Art Kruckeberg

Childhood memories of my "immersion" in our family garden are still vivid after the passage of sixty-five years. We lived in a suburb of Los Angeles, on a hilly lot, with a semiformal garden in front and a wild garden on the west-facing slope in back. Just as soon as my younger brother and I got back from Sunday school, our father ("who art in heaven") put us to work—weeding, trimming, toting plant clippings to the compost, and doing other menial tasks. That meant we were enslaved for at least two hours before we could break away to play.

Art Kruckeberg, the Pacific Northwest's native plant authority, in 1937.

Although at first we found the chore-boy duties onerous, I came to be entranced by some of my father's unique plant introductions. He had a talent for mixing the exotic with the native. In fact, most of the rear sloping garden was devoted to native Californians. Favorite natives of Dad's and mine were the drought-tolerant buckwheats *(Erigonum* spp.), the many ornamental California wild lilacs *(Ceanothus* spp.), manzanitas *(Arctostaphylos* spp.), and other choice shrubs growing wild in the Southern California chaparral—the "elfin forest" that once surrounded the Los Angeles basin.

It was through my father's close association with pioneer native plantsman Theodore Payne that our garden took on a native flavor. And all because of this early tryst with natives, I came to have fixed for life my fascination with native plants for the garden.

I actually lived in two family gardens, both of which would shape my destiny for immersion in the plant world. Besides the hilly garden at our Los Angeles home, I could lose myself in a very different, bucolic setting: my grandparents' garden in South Pasadena. By a most splendid conveyance, the Pacific Electric interurban railway, in minutes I could be at the grandparents' home overlooking the grand Arroyo Seco.

The old Victorian house and garden were a treasure trove of discoveries for a boy. There was the indoor "loot," the attic full of family memorabilia, the library, and the music room. But to the garden I most often wandered, with "rye-papples round my head" (to quote English gardener Vita Sackville-West, who mis-heard as a child, "ripe apples"). My grandparents had turned their two-acre flat plot into a nursery, so there were plants galore for me to see.

Still vivid in my mind's eye are the visions of great old live oaks (the native *Quercus agrifolia)* that graced the formal garden. And it was here that I first encountered two exotic fruits: One was the Chinese gooseberry *(Actinidia chinensis*—now known as the kiwi). As a massive vine, it clambered over the tool shed. Nearby was that delicious citrus fruit tree, the kumquat *(Fortunella japonica),* which is not hardy in the Pacific Northwest; its tiny oranges always seemed ripe and edible.

Capping this rich encounter with the plant world was my grandmother's professional rendition of native and exotic plants; she was a superb oil painter. Roses and California wildflowers were her fortes.

So it is no wonder that my childhood experiences with the plant world shaped my later commitments to botany and horticulture. Would that it could happen to more young people!

Arthur Kruckeberg is professor emeritus of Botany at the University of Washington. He is a founder of the Northwest Native Plant Society, a popular lecturer, and author of numerous books on native plants of his adopted region, including *The Natural History of Puget Sound Country.*

More stories of first gardening inspiration begin on page 32.

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The Arboretum needs your support to continue to:

- Preserve and protect rare and endangered plants and precious ecosystems
- Ensure an enriching, educational environment
- Acquire new plants for regional and international study
- Instill an appreciation of the wonder of plant life for all ages
- Maintain the Arboretum as a splendid, tranquil retreat

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The Arboretum Foundation ensures stewardship for the Washington Park Arboretum, a Pacific Northwest treasure, and provides horticultural leadership for the region. This stewardship requires effective leadership, stable funding and broad public support.

The Arboretum is home to more than 40,000 trees, shrubs and vines, with over 4,600 different species and cultivated varieties from around the world.

The Arboretum Foundation

The Arboretum Foundation has funded projects to provide:

- Education and research
- Trail improvements and accessibility
- Plant replacement and renovation
- Conservation
- Visitor enhancement

Specific projects have included:

- Renovation of four garden ponds and associated plantings
- Support of large tree management programs
- Construction of the Graham Visitors Center
- Support of the Japanese Garden
- Creation of major educational interpretive signage
- Garden enhancements including the Winter Garden, Azalea Way, Rhododendron Glen and the Japanese Maple collection

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Seattle Tilth's Garden for Children

by Anne Petersen, Carl Elliott, and Rob Peterson

An awareness of plants frequently begins in the vegetable garden. Seattle Tilth is a national leader in programs that enable children to understand how plant life works.

ABOVE: A child in her "magic spot" in Tilth's garden observes and thinks.

TOP RIGHT: Seattle Tilth's new compost bin is shown off by children and the compost clown.

RIGHT: Grinding the garden-grown wheat at Seattle Tilth. *Photos, courtesy of Seattle Tilth.*

What is Seattle Tilth?

Seattle Tilth, an urban chapter of Washington Tilth, is a network of diverse people who are dedicated to practicing and promoting organic gardening and farming, urban ecology, composting, and creation of sustainable urban and rural communities. Since Tilth was founded in 1981, it has implemented a variety of programs meeting the needs of urban dwellers. Tilth's hands-on classes foster in children a deeper appreciation of the plant processes, starting with compost, continuing with growing things, and leading to nurturing all life on Earth.

Working with Children

The Seattle Tilth Children's Garden is a place for children to explore their environment. There they can begin to see and understand the importance of interconnections among living creatures.

Tilth offers activities involving a wide variety of real garden work. The goal is to help children and adults explore the garden world from soil to plant to crawling critter. Through hands-on work, students learn to steward and nurture the garden environment.

Tilth staff members are willing to work with teachers and leaders of school groups to design an activity appropriate to your group. For information: (206) 633-0451. Leave a message for Carl Elliott, Anne Petersen, or Rob Peterson or write to Seattle Tilth Association, 4649 Sunnyside Avenue North, Seattle, WA 98103.

Earth Steward Tours

The Tilth Children's Garden provides tours to over 3000 children from around the Puget Sound area each year. The fall and spring tour activities in the garden focus on hands-on, practical gardening work that allows children to learn by doing. Summer activities are expanded to include art, stories, and music for the day-camp garden program.

Groups of children engage all of their senses through an exploration of the Tilth Children's Garden. They taste herbs, greens, and flowers; touch the soft and the prickly plants; and forage in the humus to discover its inhabitants and find the unexpected delights of a garden. Children have an opportunity to learn and practice important garden activities such as making compost, planting, tending and harvesting crops, collecting seeds, and other seasonal activities.

Registration: Call after February 1 for Spring Children's Garden Tours. Call after August 1 for Fall Children's Garden Tours.

Summer Garden Day Camp

Tilth's summer program is a great opportunity to absorb the garden at its most abundant. During the summer, children do many of the activities available during the school season plus a whole lot more. Those bright and bountiful days of summer are a time to learn how to grow a garden as well as how to use what is grown. The lengths of the classes allow art, music, storytelling, and cooking to be integrated into the garden routine. Children cook all sorts of treats: potato salad, herbal salad dressing, and whole-wheat chapati (from some of the wheat grown and ground themselves).

The children also learn garden songs such as "Dirt Made My Lunch" and "I'll Rot Away Like Compost." Some of the stories turn into opportunities to make up delightful garden plays, too. Each year children make flower-petal paper and plant-dye paints—a favorite among returning campers.

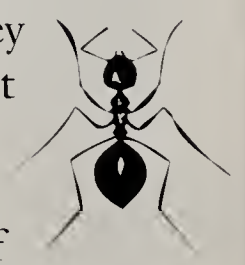
Registration: Call after May 1.

Worm Bin Composting

Children are immediately captivated by life in the worm bin. The size and accessibility of a worm bin are perfect for children to see, close at hand, how decomposition proceeds and to marvel at the diversity of organisms involved. Worm bins located and used on a school site allow children to directly understand part of modern society's waste stream and how their actions affect the environment. It is a joy to see people with no experience in composting realize that their food waste has great value for the soil. Worm bins offer that almost instant reward of fine vermicompost for the garden, effectively closing the recycling loop.

At the Seattle Tilth Children's Garden, classes and school class tours start with the life inside a worm bin. Leaders open up the worm box for all to see and place a few handfuls of fairly decomposed material in front of each child. Ooh! Aah! Everyone's eyes are on the piles of soil. Interested but hesitant, who will be the first to touch it? When one child spots a worm and begins to dig in, the hardest part of the teacher's job is over: No longer are these piles of rotted food but a whole environment.

Usually, red worms are the first explored. Leaders and students count their segments and watch how the worms move with delicate expansion and contraction. They pay close attention to the environment in which worms live. The bins are dark and kept moist but not sodden. The bedding of half leaves/half shredded paper is filled to the brim of the bin to allow the maximum space for the worms to live and to insulate them from the cold or sun.



By paying attention to the environment needed for optimum composting, children can look outside the bin for other soil life and understand the environment needed for soil health.

The change from food to soil is perhaps the most interesting to children. The soil and mulch they look at were once food waste and bedding. How does that happen? Once again, close observation is the key. After one or two children observe a worm in the act of excretion, all will rush to see. They also observe that the vermicompost is viscous, like the surface of a worm, so all this soil was made from the belly of worms!

Worms share a bin with a great many other secondary decomposers. The Master Composter Program has wonderful sheets of silhouettes for many of these creatures, which allow children to identify them through observation. Pot worms are clear white creatures like angel hair pasta, all bundled together around some food waste. Mold mites and beetle mites cluster within the bedding on some fungi or mold, casually munching away. Millipedes and isopods spend their days eating leaf bedding.

At the top of the food chain stand the ground beetles, centipedes, and spiders. A bug box (a plastic canister with a magnifying glass for a lid) is handy to have so children can observe these predators.They can look closely at the insects' mandibles in front of their mouths or at their tails. These "pinchers" are used to attack and hold their prey. A close look at the true spider and a harvestman (daddy longlegs) will reveal that the true spider has eight legs, while a harvestman has only six plus two "feelers" that mimic a spider's extra legs.

Finally the worms are fed appropriate food scraps that the children have left over from their lunch, and they bury it well in the bedding. Then the bin is closed. After the tour, children, parents, and teachers are eager to start up worm bins in schools and tie them in with classroom activities.

Starting Bins with Children

Appelhof, Mary. *Worms Eat My Garbage.* Kalamazoo, MI: Flower Press, 1982. Learn how to set up a bin.

Appelhof, Mary. *Worms Eat Our Garbage: Classroom Activities for a Better Environment.* Kalamazoo, MI: Flower Press, 1993. Provided are great classroom activities appropriate from fourth- to eighth-grade levels.

Activities with Children

During the first year, each visiting child found a place in the garden to designate as his or her own "magic spot." For some it was in the privacy of the scarlet runner bean trellis or being surrounded by sunflowers of multiple hues. The children took ten minutes at the beginning of each day to observe unique garden activity and the interactions around their magic spot. Working in a buddy group, children painted a special scarecrow to place as a token of their being and working in the garden. Numerous games help care for children right along with the plants in the garden.

Children working together on common goals in the garden develop confidence in each other and begin to trust each other for support beyond those common goals. This is not a new concept to anyone that has played ice-breaker games at work parties or school.

The children who took part in this program developed a relationship with the garden. They eventually started bringing lunch leftovers to feed to their worms; learned to appreciate the taste of their radishes, potatoes, and beans; and experienced the growth of the diversity of plants in their magic spots. They also developed friendships with each other and with the adults. These experiences helped guide them in a way only possible through the experience of shared work or cooperation with the people and other living things that surround them.

The Compost Relay. By building a compost pile, the children see tangible results from working together. Designate two lines of children. Members of each line will pass compost materials from one to the other and layer them on the pile. As green grass and alfalfa move down the line the children cry out, "Nitrogen!" As straw and leaves are passed, the cry of "Carbon!" rings out. Finally, soil and water bring microbes and moisture. Together, from hand to hand, the children have made a towering pile.

Act Like a Plant. Children roll up in a ball like a seed, slowly unfold and stand tall as arms unfold like leaves in the sun; feet stand firmly rooted in the ground and faces beam forth as flowers. The whole process repeats again and again as children act out seed, root, leaves, and

flowers. This acting creates a genuine empathy for life as a plant and what the plant needs to flourish. It's one of the favorite games.

Earth Ball. In the garden version of this active game, the ball is the garden and children work together to keep the ball aloft. The children move like one giant sea anemone with hands and arms flailing about in the air, working together to support the garden ball.

Making Beetle Houses. While cultivating the soil, children are often concerned about the creatures they unearth. The garden contains many beetle houses made of piled stones, concrete, and overturned terra cotta pots that create hidden crevices and refuge for ground-dwelling insects. Into these beetle houses go worms, isopods, spiders and of course, ground beetles, along with any creature the children feel need a safe home. This activity makes the garden a safe haven for a wide variety of life and not just a collection of cultivated plants.

Harvest. All gardens have a harvest to bring gardeners together for a feast. Tilth prepares easy food harvested fresh from the garden. Potato salad consists of heirloom ruby crescent potatoes, parsley, onions, radishes, carrots, and a garnish of nasturtium flowers. To make a flower burrito, use leaves of fresh greens to roll up edible flowers such as borage, calendula, fennel, begonia, carnations, sage, and most culinary herbs. Children fill the roll of greens with a kaleidoscope of flower colors.

Working with Teachers

Summer Teachers' Class

The Seattle Tilth Children's Garden provides the venue to help teachers examine how subjects in the school curriculum can be integrated with a garden and outdoor learning center. The teachers' class is offered through the Heritage Institute of Antioch College.

Teachers participate in garden activities that instruct about natural science, art, history, language skills, mathematics, and building self-esteem right along with gardening. This class has important hands-on elements that will facilitate discussion and learning and help teachers become confident to prepare a garden at their schools. Teachers will tour children's gardens and schools with environmental programs to learn from their successes and trials.

Seattle Tilth staff will help teachers in identifying and finding resources in their areas. Practical issues are discussed, including working with volunteers that are needed by schools to help teachers start gardens and assist with teaching. Volunteers also learn how to find resources, work with school district grounds maintenance crews, and help in other unique situations.

When: Call for dates.
Ages: teachers of grades K–8

Teaching Peace through Gardening Curriculum

Summer of 1995 marked the beginning of a pilot project for teaching peace through gardening for children with special needs and situations. Out of the project, Tilth developed a curriculum that is adaptable for anyone wanting to work with children in a garden. This program allowed for children in transitional housing to come visit the Seattle Tilth Children's garden on a weekly basis for five weeks. The program stemmed from a grant funded by the Teach Peace Foundation and the cooperation of the Atlantic Street Center. The curriculum provides an entire outline and description for implementing the activities. Call for a copy.

There was a main premise in developing the curriculum: Teaching organic gardening to children allows them to learn to work together and to cooperate with other living things, so all benefit. It provides a means for creating peace at an individual or group level. The garden activities stress four main points important in working with children to promote peace:

- sense of ownership: a personal connection that cultivates a relationship for all things;
- sense of physical and promotional safety: opportunity to share ideas, feelings, and fears, thus creating a comfortable setting in which to take risks;
- sense of community: cooperating and working with others to reach a common goal; and
- nurturing: caring for living things and respect for life.

Anne Petersen, lead teacher at the Seattle Tilth Children's Garden, has a master's of education degree from Colorado College and five years of educational gardening experience.

Carl Elliott, Seattle Tilth Garden Coordinator, develops curricula and teaches organic gardening to urban residents of all ages. He can be heard as the "Radio Gardener," Fridays at 10 a.m. on KUOW 94.9 FM.

Rob Peterson, Seattle Tilth Garden coordinator and part-time farmer, teaches organic gardening to urban residents of all ages.

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"When horticultural luminaries are in town, this is where they are taken for a look-see. I can count on Wells-Medina year round to be in top form, so I often stop for a horticultural pick-me-up. I often find other plant aficionados who have traveled as far as I have come to enjoy a look around."

–Stephanie Feeny
The Northwest Gardener's Resource Directory, 1995

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For Further Information

Gardening with & for Kids

by Valerie Easton

Some of the most enticing gardening books being published are aimed at younger gardeners. The Elisabeth C. Miller Horticultural Library has built a collection of books for children and books for adults working with children; both support the Arboretum's Saplings Program. A complete annotated list of children's gardening and natural history is available from the library: (206) 543-8616.

Brooks, Felicity. *Protecting Trees & Forests.* London: Usborne Publishing, 1991. Complex information is presented simply and effectively. Through the use of surprising facts ("One edition of a daily newspaper uses wood from 5000 trees."), the author raises the reader's awareness of some of the issues surrounding forests and offers possible solutions.

Burnie, David. *Flowers.* New York: Dorling Kindersley, 1992. Bright photographs and illustrations portray various aspects of botany such as parts of plants, life processes, and ecosystems. Includes the world's largest flower, the rafflesia.

Cornell, Joseph. *Sharing the Joy of Nature: Nature Activities for All Ages.* Nevada City, CA: Dawn Publications, 1989. To get children and grown-ups to actively and joyously participate in nature activities is Cornell's goal and gift; he clearly explains his philosophy and techniques in his third book.

Criswell, Susie Gwen. *Nature through Science and Art.* Blue Summit, PA: TAB Books, 1994. How does a seed become a plant? What are weeds? Children in grades three to six will enjoy these projects that involve them in learning about the natural world through drawing, writing, and even creating a spider web.

Diehn, Gwen, and Terry Krautwurst. *Nature Crafts for Kids.* New York: Sterling Publishing, 1992. The projects are presented by season for people who learn by doing as well as by reading. The activities, which are accompanied by good photos and clear diagrams, range from simple to complex and are for all ages; some may even be interesting to adults.

Dorling Kindersley, Ltd. *What's Inside? Plants: A First Guide to the Wonders and Workings of Plant Life.* London: Dorling Kindersley, 1992. Designed to help young children understand how plants grow and flower, each page has two bold illustrations: One shows the plant from the outside, and the second one reveals the inner parts.

Dorling Kindersley, Ltd. *The Visual Dictionary of Plants.* New York: Dorling Kindersley, 1992. Hundreds of color photos and drawings clearly illustrate the fascination of germination, pollination, roots, and bloom.

Doyle, Mycol. *Killer Plants: The Venus Flytrap, Strangler Fig, and Other Predatory Plants.* Los Angeles: Lowell House Juvenile, 1993. Discover the thirteen cannibals of the plant world that either eat their prey or leech off other plants. Top-quality photographs suitable for an adult coffee-table book are accompanied by text that children can read.

Heller, Ruth. *Plants that Never Ever Bloom.* New York: Grosset & Dunlap, 1984. Brief rhyming text and illustrations present a variety of plants that do not flower but propagate by means of spores, seeds, and cones.

Herman, Marina Lachecki, et al. *Teaching Kids to Love the Earth.* Duluth, MN: Pfeifer-Hamilton Publishers, 1991. Presented are games, stories, and explorations designed for parents or other teachers to share with children. Creativity, awareness, and developing a sense of wonder are stressed in this "Best environmental book of 1992," awarded by Midwest Independent Publishers Association.

Hickman, Pamela M. *Plantwise.* Toronto: Kids Can Press, 1991. Activities and interesting information help the intermediate reader discover the role of different plant parts and how new plants are made. Projects include finding exploding seeds, growing crooked plants, making leaf skeletons, etc.

Kalman, Bobbie, and Janine Schaub. *I Am a Part of Nature.* New York: Crabtree Publishing, 1992. "Once we begin to understand how we are joined to the natural things around us, we will start to feel that we are a part of nature and that nature is a part of us." By including a short story and discussions about topics such as food chains and webs, the authors attempt to foster an understanding and appreciation of the natural world in primary-aged children. Text is beautifully accompanied by color photographs and illustrations.

Langley, Andrew. *Wetlands Nature Search.* Hong Kong: Joshua Morris Book from Reader's Digest Association, 1993. The magnifying glass illustration on the cover alerts you immediately that there is something different about this book. As young readers learn about each aspect of wetlands, they are asked to find small animals almost hidden in the illustrations, using the enclosed magnifier. Pages at the end give the puzzle answers to each animal's secret location.

Ocone, Lynn, with Eve Pranis. *The National Gardening Association Guide to Kids' Gardening: A Complete Guide for Teachers, Parents and Youth Leaders.* New York: John Wiley & Sons, 1990. This invaluable, practical, realistic guide is for anyone wanting to start, improve, or run a garden program for young people. The authors cover topics such as: new project ideas, resources, fund raising, management, educational activities, and much more.

Perenyi, Constance. *Growing Wild: Inviting Wildlife Into Your Yard.* Hillsboro, OR: Beyond Words Publishing, 1991. Colorful collages illustrate this children's tale of perfect, lonely lawns growing into wild and beautiful habitats for urban creatures.

Savage, Candace. *Get Growing! How the Earth Feeds Us.* Buffalo, NY: Firefly Books, 1991. Children are encouraged to think about the origins of food, by addressing issues in a way children can understand. Covered are topics such as why we eat; soil, pollution, pests and pesticides; and how current food-growing policies and procedures affect world hunger.

Taylor, Barbara. *Green Thumbs Up! The Science of Growing Plants.* New York: Random House, 1992. A part of the "Step Into Science" series, this book is divided into subsections, each of which presents a different plant topic with a related fun learning project. Adults might even find some of the projects interesting, such as determining pollution levels in your area.

Envy and Wild Spaces

by Valerie Easton

I grew up in a child's paradise in the north end of Seattle, Lake Forest Park, consisting of an acre of woods with a creek. I remember very little about the house itself, but I carry the memory of the garden with me in great detail—in a much enlarged scale, I realized when I visited it again as an adult. The woods remain in my memory as vast and dark (the "Witchy Woods") and the creek as too wide and rushing to dream of crossing.

One of my most intense memories is my burning envy of my sister's garden. All the kids were given garden areas, and my older sister grew what I considered to be an absolute marvel of fragrant plants—mostly sweet alyssum, pinks, and Sweet William. I coveted the striped petals, all the soft pink perfection of her garden compared with my ragged efforts with floppy sunflowers and stinky marigolds. It was more unbearable that this garden marvel was only a few steps down from my mother's rose garden, made lush from all the manure provided by my father's racing pigeons. Against these achievements, my own little plot, further down the slope by the raspberry beds and the compost piles, was sad indeed and embarrassed me for years.

The wilder parts of the garden were what I really loved, especially the creek, which was wonderful at all times of the year. In the winter, we competed in the forbidden game of trying to break off big chunks of the water-soaked creek banks, sending them and sometimes us into the rain-swollen currents. We spent summer days wading, digging in the little muddy shoals, and endlessly damming up small ponds to hold water skippers, which my brother and his friends relentlessly blew up with firecrackers. Most exciting was to find a slimy green-brown salamander hiding in the muddy bottom water and drag him off to school for show-and-tell. Once I even took a very large kelp sea monster (collected at the ocean and which had grown too smelly for the basement) and floated it down the creek to his new home in Lake Washington. I searched for evidence of him for years.

Valerie Easton is a librarian at the Elisabeth Miller Horticultural Library, University of Washington Center for Urban Horticulture. She writes in *Pacific Magazine* of the *Seattle Times.*

More stories of first inspiration, page 32.

Designing Gardens for Children

Jan Pirzio-Biroli interviews Tom Berger

Tom Berger is an editorial board member of the Bulletin. *Since the inspiration for the children's issue was his, it seems only fitting to explore his interest in the subject and the manner in which he has approached it in his work. Tom's insights into children's relationships with gardens not only reflect his philosophy but his illuminating passion for the subject.*

"I like designing for children, because some of my strongest memories about plants and gardens come from my association with the gardens of my childhood and the simple plants that we grew, which are so profound in my memory."

Photos courtesy of Tom Berger

Play structures can be used for garden trellises after children leave home, then returned to use for grandchildren.

I am from Brookings in southern Oregon. My dad was a logger, and he raised Easter lilies; we had four acres of them. I was one of seven children, so there were always tons of kids around the house. We had a big lawn and a big garden in back, and we played things like hide-and-seek late into the evening. We didn't hide under my mother's favorite kinds of plants, because there were plenty of other places instead, and we learned our boundaries.

There was lots of freedom in our little town. At least two days a week in summer we went down to the beach where there were rocks to climb on and driftwood to make forts with. One of my fondest memories of Brookings was walking up into the foothills and bringing home to my mother arm loads of *Rhododendron occidentale* and columbine. The Chetco River is lined with myrtlewood trees, and we'd go up and play among them with their wonderful aromatic smell. We would pick daffodils that had naturalized near our Easter lily field, and we had fuchsias that would grow year-round.

When I was fourteen, my father realized that the logging industry was starting to decline, so he sold all of his logging equipment. He bought a garden center in Bremerton, Washington, and we moved to Port Orchard; that's when I started working there. I helped build the store. I helped pour concrete, finished the concrete, built walls and fences, and was very much a part of every aspect of the store.

Tom Berger received his training at Washington State University, Pullman, in the architecture department.

Because I had been involved in design and construction of landscape designs and plant materials, I spent most of my time in the architecture department with the primary goal of a mix of architecture and landscape architecture. My interest as a kid was art and architecture. I had all the plant materials around me, and when I discovered there was such a thing as landscape architecture, it was a sitting duck for me. I wanted to understand the structure of architecture, so that my gardens and my garden designs would be compatible and, in fact, complementary and in synch with architecture.

My wife and I have four children, and all of them have shown an interest in gardening at young ages. There is a conflict that occurs between what young children need to do as they grow up and how that affects a garden. A good example of this was in my own garden: I have worked with bonsai since I was sixteen, but when our family began to play soccer in the backyard, the bonsai had to be moved to another place.

Tom's interest in designing for children began with his experience and his own family.

However, I have always designed play areas that could be reused as an element in the garden. In our case, the soil box that I needed to mix the soil for my pots had a double use for the children's trucks and other toys. Soil worked just as well as sand, and it didn't attract cats. It was designed in a perfect circle, made of brick and lined with brick (see this issue's cover).

In my own garden, the soil box remains, even if my children are not there, and it is still where I mix my soils. In another garden we did a sand box about six years ago, and we are now talking about converting it to its original purpose—or its secondary purpose—a water element, a fountain.

We are currently working on another project that will have a sand box. Actually, the area itself will be all sand. It will have a swing and some climbing structures. Even the frame that we are using as the swing could become part of a trellis at a later time. All we need to do is add two more columns and put a trellis across the top, so that we can reuse part of that structure and incorporate it as part of a sun-shade or trellis. The definition of the space will be created by a hedge, something like Japanese holly that is tough enough to take a kid running into it occasionally and will allow us to patch and repair. It is outside a child's bedroom now. That will become a guest bedroom in the future, and the play area will become a terrace, an extension of the room.

Tom spoke of the relationship between the changing aspect of gardens and the need for them to retain some components that recall the happy memories of childhood.

Children are protective of their memories. I think my kids will take with them some remembrances of climbing. All of them have climbed the big cedar tree in our backyard. I also have a magnolia in the front that I thought was getting too large and suggested to my wife one

day, rather informally, that perhaps I should sell it. My daughter Ashley, who was seven at the time, went out and put a sign on the tree that it was her climbing tree and I had no business selling it.

Similarly, I had put a swing in a trellis that I was using as a privacy screen. A few years ago the metal chain rusted out on one side and the children were adamant—even as grown children—that I had to get the swing back, that it was part of the backyard. Adult children and their memories of childhood influence what decisions they will make for their own place when they start to create their own garden.

A garden has to be dynamic. You have to recognize that things you will use in a particular way while children are young will not necessarily serve the same purpose when they are grown, and it only comes back to the same use if grandchildren return to the same site. That is rare these days, but it was nice. Of all the things you remembered as a child, when you came back the recollection was still there but things had changed, the scale had changed.

When Tom spoke of adults' supervision of children in the garden, he mentioned in passing that while parents need to participate in the instruction of their children regarding the edibility of plants, for the most part it is important to give them free rein in their use in the garden.

One of the things I have tried to do in all of the children's play areas is to introduce them to edible plants. I've used strawberries and blueberries, especially, also currants, gooseberries, and artichokes—things that kids can eat. My theme was that while they were playing and while their parents were helping them to play and learn, they were also introduced to plants and learned very early on to ask, "Can I eat this?" or "Can I not eat this?"

However, my philosophy about play for children is that you don't tell them how to play, you just let them play and give them the opportunity to imagine. So the more natural the play opportunities through stones and grade changes and pieces of wood, the more they learn about playing and about life than if you tell them how to do it.

If you give little kids a grade change, they'll sit on the steps, they'll sit on the edge of something where there is something around them. The intimacy of the space, the sense of enclosure, and the ability to get into a space that they are more appropriately scaled to, is where they are most comfortable. They'll bring their dolls, they'll bring their trucks, all the little things they enjoy most, and surround themselves in a place that is comfortable for them.

You don't have to say, "You've got to play on the jungle gym." You just give them the place to play, and they'll always find something to play with. They are more self-motivated than we give them credit for. When our youngest was smaller, she would create her space by lining up all of her dolls and things so that she was the center of attention. She built the space she was most comfortable with. We are too quick to tell children what they should have fun with. They don't need to be told. What we need to do is watch them more and provide them with the things they are using to make their space more responsive to them and their own personal needs.

Tom Berger is principal landscape architect with the Berger Partnership, Seattle. He is a member of the *Bulletin's* editorial board.

Jan Pirzio-Biroli is an advisor to the *Bulletin* and member of The Arboretum Foundation.

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Places to Visit

by Stephanie Feeney

You will enjoy exploring with children a variety of garden spaces, from Seattle to British Columbia.

Volunteer Park Conservatory

Volunteer Park Conservatory was built in 1912, along the tradition of London's Crystal Palace. When children pass through the big double doors into this pleasantly humid environment, they are virtually transported into another world. This world inspires visions of faraway lands filled with exotic, unfamiliar plants, the sounds of hissing steam pipe, and wild-textured foliage crowding onto the narrow walkway and towering high above.

Each of the five rooms houses a different horticultural display representing distinct climate zones or plant collections. On a cold, gray winter day it is a visual extravagance to come directly upon the fanciful orchids—elegance of the highest order. Just trying to give names to the blotchy, striped, speckled markings; the vast range of colors and hues; and the ruffled, swooping, and wing-like petals challenges the most facile of imaginations. From somewhere opposite the island planting of palms, bamboos, and statuesque 35-foot-tall fiddleleaf fig trees, I could hear a practiced deep voice: "Say kar ee OH tah MI tus" and the tentative, though surprisingly agile, reply of a child: "Kar ee OH tah MI tus." There then ensued a discussion of the graceful, wide-spreading tips of the leaflets that give this fine specimen its common name, "fishtail palm."

Stop next in the Seasonal Display House where color and fragrance are reliably on show. Move on to the Cactus House, with its rich collection of plants unfamiliar to Northwest residents. The center bed houses a four-foot-tall Saguaro cactus with deeply pleated stems running in parallel ridges to provide cooling ribs of shade. These accordion-like folds have evolved to expand quickly to absorb water, and they contract slowly as moisture is lost. The spines on cactus are a defense against dessert animals in search of a thirst-quenching morsel.

En route to the other end of the conservatory, a refreshing stop in the Fern House invites a rest under the shelter of a vigorous chestnut vine *(Tetrastigma voinieranum)*. Its fat tendrils cleverly reach out for a hold to help them along their way over the arbor and into the brighter light of the adjacent room. Here among the staghorn *(Platycerium)* ferns, mounted like horticultural trophies along the wall, is a world-class collection of bromeliads. Overhead are wispy air plants *(Tillandsias)*, which dangle from branches like Rapunzel letting down her golden hair.

Most of the plants in this house are members of the pineapple family and are epiphytes; epiphytic plants use other plants for support but not nourishment. Again, their foliage and formation tell the tale of their particular adaptation to collect and store water. Typical of the genus, the boldly marked, leathery leaves of the fingernail plant *(Wittrockia superba)* form a vase-like shape from a basal rosette that captures and holds water for later use.

Volunteer Park Conservatory: 1400 E. Galer St., Seattle, WA 98112; (206) 684-4743. Open daily, including holidays, 9 a.m.–5 p.m.; in winter, 10 a.m.–4 p.m. Admission is free.

Seattle's Community Gardens

On a sunny, summer day plan a visit to a community garden. Seattle has two particularly appealing destinations: the Interurban P-Patch Project and the Danny Woo International District Community Garden.

Seattle is particularly lucky to have a very successful community gardening program, bringing together the love of gardening with an appreciation of neighborhood, in the broadest sense. Kids are an important part of these sites as they help tend the plots and harvest the fruits of their labors, not only to take home but also to share. The scale of the plots, generally ten feet by ten feet, makes an impressive example of what can be accomplished in small spaces, just right for a child's first garden.

Wildly creative, these sites are populated with whimsical scarecrows standing guard over the vulnerable crops, a multitude of highrise birdhouses (many clothed in shrouds of volup-

ABOVE: VanDusen's maze garden. *W.R. Bergen photo.* BELOW RIGHT: Rhododendron walk. *Stuart McCall photo.*

tuous vines), and ingenious arbors and trellises expanding the garden skyward. Statuesque sunflowers, planted extensively through most sites, create a veritable forest by late summer.

Let the children know more about this approach to using vacant land productively in an urban setting. It is valuable for the many lessons in cooperation (monthly work parties, informational kiosks, and less formal everyday offers of help), the ethic of organic growing techniques (no pesticides or herbicides allowed), and the pervasive desire to share with the less fortunate (through an established food bank delivery system).

In a similar vein, the Danny Woo International District Community Garden speaks of multi-cultural cooperation. Here, on terraces set into a steep hillside, are nearly 100 garden plots, typifying garden traditions of many Asian nations. Nameplates set out to identify the garden owners reveal representatives from China, Japan, Korea, the Philippines, and Vietnam. They grow a myriad of fascinating vegetables you are not likely to recognize. Perhaps you will happen by on a day when the handsome pig-roasting pit fills the air with a tantalizing aroma.

Seattle P-Patch Program office: 618 Second Ave., 7th floor, Seattle, WA 98104; (206) 684-0264; 35 sites, plus seven under the Seattle Housing Authority.

Danny Woo International District Community Garden: South Main at Maynard Ave. South, Seattle, WA. For more information contact Interim, (206) 624-1802.

VanDusen Garden in BC

VanDusen Botanical Garden in Vancouver, British Columbia, is one of the best gardens to share with children. In 55 acres, it brings together all of the elements that supercharge a child's interest and imagination: narrow pathways that disappear around bends inviting investigation (the jungle-like bamboo collection or the rugged rock outcroppings of the heather garden); tunnel-like arbors festooned with luxurious vines (The Laburnum Walk, Wisteria and Kiwi Arbors); bridges over vast lily-padded ponds beckoning a closer look at the elephant-eared *Gunnera chinensis* (hot spots to hide out!); vast undulating lawns punctuated with venerable spreading oaks and stately beeches; a tricky *Thuja occidentalis* 'Fastigiata' maze (hours of amusement, lots of giggles and squeals of frustration); troughs displaying the Lilliputian world of dwarf alpines; and, of course, the Children's Garden featuring plants of unusual or bizarre shapes *(Corylus avellana* 'Contorta', corkscrew hazel; *Juglans regia* 'Pendula', weeping walnut; and topiary figures of legendary beasts.)

A creative self-guided tour designed especially for kids points out the coolest parts of the gardens. Copies of the tour are free, available April to mid-October.

VanDusen Botanical Garden: 5251 Oak Street, Vancouver, BC V6M 4H1; (604) 878-9274. Open daily, 10 a.m. (closing times vary by season). Admission.

Stephanie Feeney gardens in Bellingham, Washington, and is the editor of *Northwest Gardener's Resource Directory,* sixth edition and 1996 addendum. Bellingham: Cedarcroft Press, 1995.

Memories of Childhood Gardens

The seeds of gardening interest are sown in youth. Below, well-known and private gardeners share their first moments of horticultural inspiration. Other stories appear on pages 18 and 25.

Sometimes the memories of a child's first garden start with dreaded weeding tasks inflicted by parents. Later they continue with inspiration from beloved relatives. These memories of smells and sights persist for years, though gardens revisited often aren't as big as the memories are. The following experiences span from foreign countries to the US heartland, and come together here in the Washington Park Arboretum.

Teenage Memories of Belfast

by Brian O. Mulligan

When I was a teenager in the 1920s, my parents lived near Belfast, Northern Ireland, where my father was an accountant in the city's harbor office. Although it was a busy port at that time, later it was bombed severely by the Germans in World War II.

Our home for several years then was in a fairly large house in Holywood, County Down, a few miles northeast of Belfast on the shore of the sea-lough of the same name. The house was at the end of a row of four and had a large garden of triangular shape attached to it, as well as a tennis court in front, across a driveway, which served all the houses. My father was quite a keen tennis player and arranged games there with like-minded friends.

The garden must have covered about three-quarters of an acre and was widest at the end nearest to the house. Here, my mother assembled and planted a long border of herbaceous plants on a slight slope facing east or southeast. I do not now remember all the plants that she used, but they were enough in variety to attract numerous butterflies in summer, including red admirals, painted ladies, and peacocks, which I pursued periodically with a net. No doubt the border contained a variety of members of the daisy family, especially of the genera *Aster, Chrysanthemum, Echinops, Helianthus,* and *Helenium,* with an assortment of other herbaceous plants such as *Crocosmia* (Montbretia), *Galega, Geum, Lupinus,* and *Nepeta* × *faasenii,* the last often used as an edging plant for such borders.

Brian O. Mulligan, Director Emeritus, Washington Park Arboretum, age 2. Photo courtesy of Margaret Mulligan.

Plants were most likely acquired from other gardening friends in the area, or less often from local nurseries, although transportation to these would have been difficult, except by train or bus, since cars were scarce in those days amongst our acquaintances. Happily, one of these was my father's sister, Clara Inglis, who lived at Marino, a few miles northeast of Holywood and almost on the shores of the same lough. Sometimes she was able to take my mother to nurseries some miles distant.

In this almost maritime climate, she grew such shrubs as the Chilean *Escallonia macrantha, Pittosporum tenuifolium* from New Zealand, as well as native ocean spray, *Holodiscus discolor* from the west coast of the US. My mother also employed an elderly gardener about once a week, both to mow a small lawn area facing the herbaceous border as well as the tennis court when needed. With his help, she also raised some vegetables, though not enough to feed a family of four regularly.

At that time, she belonged to the Royal Horticultural Society (RHS) of London, and the English Alpine Garden Society (AGS). Both societies published quarterly journals of considerable merit, but as I was frequently away from home either at boarding school in England (1921–1924) or as a student at the Royal Horticultural Society's Garden at Wisley in Surrey (1924–1927), I did not always have

the chance to digest them.

My mother remained a member of both societies until her death in 1946, so I eventually inherited both sets of journals. That of the RHS is now bound and in the Elisabeth C. Miller Library at the Center for Urban Horticulture. She never had a real rock garden, but when we moved to a suburb of Belfast in the late 1920s, she met other members of the AGS and attended meetings of the local chapter with them. My own interests then were chiefly with woody plants, as a result of the training I received at Wisley and the large plant collections there.

I was fortunately able to make the acquaintance of and form a friendship with Hugh Armytage Moore, who owned a large and well-known garden, almost an arboretum, at Rowallane, Saintfield, County Down, situated in the hills a few miles south of Belfast. I visited him (by train in those days) whenever I was at home on vacations from Wisley or wherever else I was employed in England at the time, e.g., at a University of Bristol Research Station in the early 1930s.

Rowallane was then well established and particularly noted for its extensive collection of rhododendrons, both hybrids and particularly species, often raised from Chinese seeds received from the explorer, Forrest, and from other noted gardens in the British Isles, such as Caerhays Castle (J. C. Williams) and Exbury (Lionel de Rothschild). To see them in bloom in the spring was an education to any lover of plants; I appreciated the skill with which they had been blended into this undulating, often rocky landscape.

Brian O. Mulligan (1907-1996) was director of Washington Park Arboretum from 1946 to 1972. Mr. Mulligan and his staff developed the arboretum's collections and displays to be among the top three living museums of woody plants in the United States. Mr. Mulligan wrote this article, especially for this issue, shortly before his passing. He is greatly missed.

So it Was Not Giverny...

by Jeannine Curry

Where I lived as a child in France, there was no lawn. The courtyard (30 × 40 feet) was covered with small pebbles on which we sprinkled rock salt from time to time as a weed deterrent. But it was alive because of a dozen or so very large terra cotta pots, homes to tulips, heliotrope, lavender, geranium, chrysanthemums, and assorted seasonal annuals. These containers were placed close to a tight six-foot-high boxwood hedge abutting the outside sidewalk, thus ensuring a Frenchman's love of privacy.

At one end of the hedge was an arbor supporting a white climbing rose and a white grapevine. At the other end stood a large round-headed floriferous linden tree (illustration, above); the powerful scent attracted hordes of bees, which, thank heaven, went home at sunset. It was then my job to climb the ladder and harvest the yellowish flowers. When air-dried, these were used in infusions to calm nerves.

My big responsibility, at age 10, was the sacrosanct herb/medicinal garden, a circular, slightly raised bed ringed with sorrel. There grew shallots, chives, parsley, chervil, mint, and chamomile. I saw to it that it was weed-free, that nothing ever went to seed, that the mint did not encroach on neighbors, and that the chamomile flowers were picked at the right time. The dry mint leaves were the base for an infusion for helping digestion, while chamomile tea was soothing. Blond people also rinsed their hair with a chamomile concoction to prevent darkening of their tresses.

In the middle of the bed was a beautiful rose bush with shell pink blooms, placed there on purpose to deter the flying pests that were repelled by the smell of herbs. This bush was mildew- and aphid-free and probably liked the coffee grounds scattered around the crown once a week.

I never really enjoyed my gardening chores, but I can recall the perfumed air around me when I opened the small gate. And how is it that I cannot find anywhere an overpoweringly scented linden tree as sweet-smelling as the one that grew near Paris a long time ago?

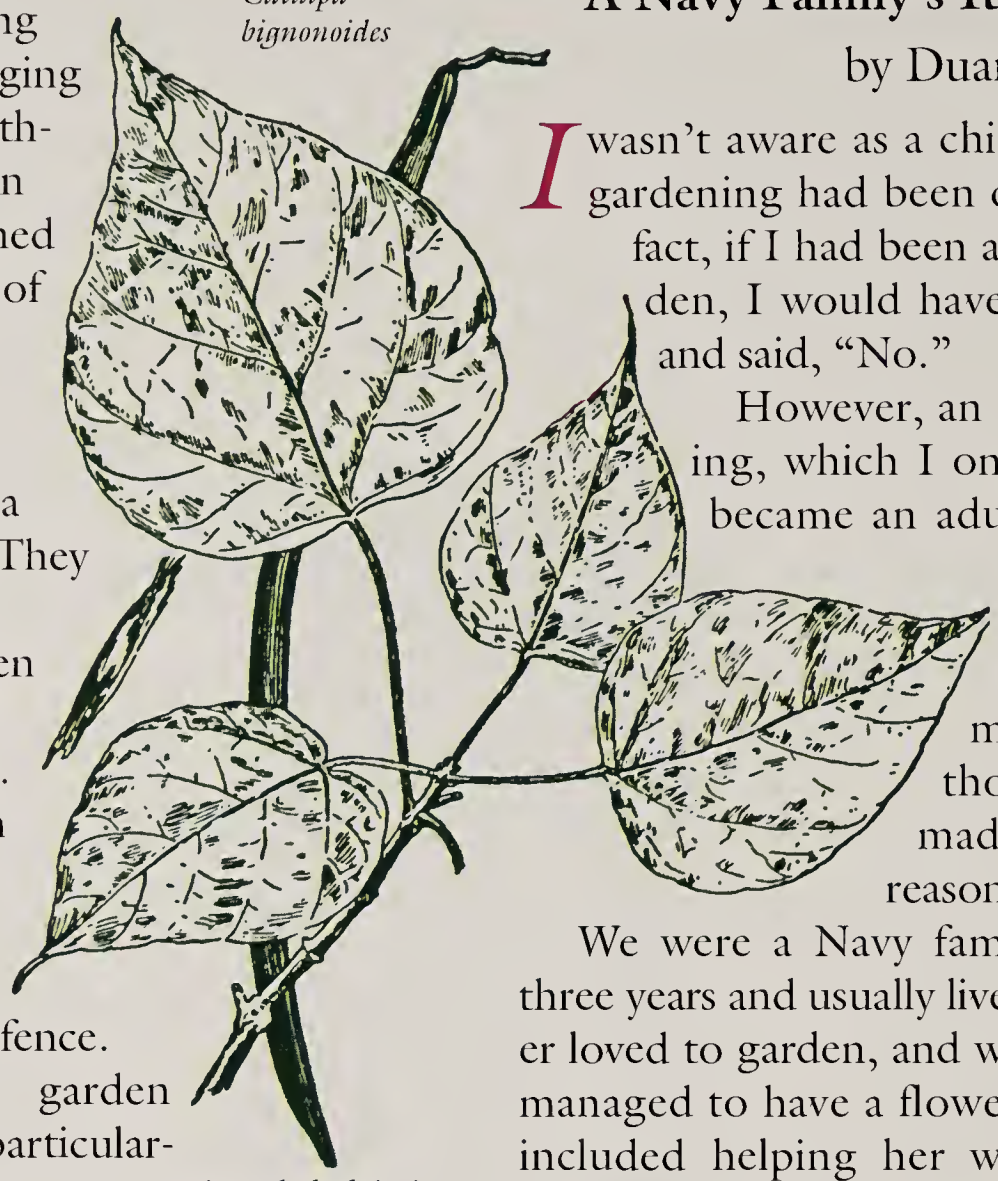
Jeannine Curry is a board member of The Arboretum Foundation, secretary of the *Bulletin* editorial board, contributing author, Arboretum guide, and long-time Arboretum volunteer.

Along the Mississippi

by Jan Pirzio-Biroli

My mother and I grew up in a two-acre garden bordering the Mississippi River. A special reminder of the orchard it had been in the nineteenth century was an immense, hollow seckel pear tree—a perfect hiding place for several children.

The first sign of spring for me were tulips emerging along the border of Mother's perennial garden. An enormous, multi-stemmed lilac bore small panicles of deep purple flowers. Peonies symbolized Memorial Day.



Catalpa bignonoides

Garter snakes hid in a thicket of yellow roses. They were not poisonous, of course, but all of us (even my grandmother) were scared to death of them. One spring day a swarm of bees clustered in the hedge of weigelia, bridal wreath, and mock orange along the fence.

In summer, the garden exploded with color! I particularly remember gaillardias, coreopsis, delphiniums, and rosy-purple rudbeckias. Among the treasures in Mother's rock garden were shooting stars and hens-and-chickens. Lilies bloomed in the "sunken garden," which had once been the cellar of a small house. Blue flowers of *Clematis jackmanii* flowered above my playhouse door.

Across the driveway in the lowest level of my grandmother's garden were bachelor's buttons, pearly everlasting, and railroad flower *(Tradescantia)*. The central terrace, which she had built with small boulders from the river's edge, was massed with self-sown portulaca. Petunias grew among the flagstones of the upper terrace, where she sat to watch the river boats. We made dolls from her hollyhock flowers and crowns from the leaves of a huge catalpa beside the house.

Every Halloween, Mother raked fallen leaves and burned them in small piles along the street. Then winter came, and there was snow—lots of snow. We had places for sledding where there had been flowers, piles of burning leaves, hiding places, bees, and garter snakes.

Jan Pirzio-Biroli is the former naturalist of WPA. She is advisor to the *Bulletin's* editorial board, a member of the board of The Arboretum Foundation, and current volunteer.

A Navy Family's Itinerant Garden

by Duane Kelly

I wasn't aware as a child that an interest in gardening had been developing in me. In fact, if I had been asked if I liked to garden, I would have turned up my nose and said, "No."

However, an interest was incubating, which I only discovered after I became an adult and found myself naturally gravitating to gardening. At first, this surprised me, but the more I thought about it, it made sense, for several reasons.

We were a Navy family, so moved every three years and usually lived on base. My mother loved to garden, and wherever we lived, she managed to have a flower garden. My chores included helping her weed, which I hated doing at the time. It was obvious to me, however, that gardening gave her pleasure.

My father found a P-patch–type garden site near one of the naval bases we lived on, and he planted vegetables there. I fondly remember going with him on summer evenings to tend that garden.

My grandmother had a wonderful rose garden with hundreds of rose bushes at her home in Salt Lake City. She was a bitter, unhappy woman who had been scarred by the Depression and other events in her life. However, even as a child I couldn't help but notice that she exhibited more grace and gentleness when she was in her garden than at any other time. Today, I have strong views about the therapeutic and restorative value of gardening, which originate with my grandmother, many years ago.

Duane Kelly is founder of the Northwest Flower & Garden Show. He is a past president of The Arboretum Foundation and a magazine publisher.

First Ohio Gardens

by Steven R. Lorton

Back in western Ohio in the spring of 1952, my mother was again demonstrating how shrewd she was. She'd seen the wanderlust in my eyes and knew that doling out unexpected privileges gave her control. "Now that you're five, Daddy and I have decided that you can walk around the block by yourself. You can't cross any street and you can't go off the block." Mother was smart. I was off in an instant for the first of many block walks. A great adventure had begun.

Down our street at the corner stood the big white frame house of Mr. and Mrs. Inchinelli. It had a turret with a witch's cap, fascinating enough, but in the middle of the huge lawn was a circular island bed filled with blooming peonies. The big pink petals and light fragrance beckoned me to its edge. Mrs. Inchinelli called out from a second story window, "Pick one and take it home to your Mom. Tell her I've been busy, I'll be over next week!" I did. Mrs. Inchinelli was.

Next house down belonged to Mrs. Belt, a widow with more kids than anyone could keep track of. Mrs. Belt lived in a large bungalow built with river rock halfway up the first story and porch posts to match. The twin lilacs at each side of the porch steps were enormous and untended. Naturalized daffodils, tulips, hyacinths, and a zillion other remnants of Mother's Days gone by popped from the high grass around the foundation. Mrs. Belt hung bits of string in the lilacs each spring to help the birds bind their nests, and once, a decade later when I'd developed a reputation for doing yard work, I offered to prune Mrs. Belt's lilacs for free. "Thanks, honey, but the truth is, I like them the way they are. I get in this house and I feel like a bird in a bush!"

The house east of Mrs. Belt belonged to Bud and Dot Wise. Like the Inchinellis', their house was big and painted sparkling white. An annual coat of sky blue paint was applied to all porch furniture and Dot's antique wicker plant stand, which was topped by a massive Boston fern. Immaculately clipped yew formed continuous rectangles of dark green around the foundation of the house. Cast stone urns at the foot of the stairs erupted in red geraniums and white petunias. Bud and Dot drove identical new cars (except his was black and hers was white). They smoked cigarettes, had a cocktail out on the porch every evening in summer, and were charter members of the newly established country club. They were glamorous.

At the end of that block, old Mrs. Pfister always invited me in for a glass of milk and a piece of cake. She cut one of her fabled hybrid tea roses for me to take home, and I looked out the window of her breakfast room to the giant black locust. Dad had always snorted, "It's a trash tree, but it does make good fence posts. They don't rot." Mother said, "I imagine that tree is like the ones of the African savanna." After she told me what the African savanna was, I could never look at Mrs. Pfister's locust tree without seeing elephants and giraffes, and was glad that she hadn't cut it down.

Usually, an hour into my adventure, Mother called my name. "Stee-vee!" she sang out with an ability to project her voice, second only to Ethel Merman. I'd holler, "Coming!" and head home.

I learned some important things on those walks. I learned that I loved to look at plants and the gardens they grew in. That I like the people that lived in the gardens. And that each garden was different and so were each of its inhabitants. I had this sense, then, that I'd always be in a garden someplace. And that has been so.

Steven Lorton is the Northwest Bureau Chief of *Sunset Magazine* and advisor to the *Arboretum Bulletin*.

Midwest Melon Grower

by John Wott

I grew up on a family farm of 100 acres near Lake Erie in northern Ohio. We had a half-acre garden, from which my mother canned and froze many vegetables.

I remember when we purchased our first freezer and how green the frozen peas and beans could then be. I remember the anticipation of waiting for my dad to finish the field work, so that he could plow and prepare the garden, usually around Memorial Day weekend.

As far back as I can recall, I would save seed for marigolds, zinnias, gourds, melons, and beans. I developed several strains of cherry and pear tomatoes (yellow and orange) and red soup beans. All these seeds were harvested, cleaned, and stored in my special cardboard box in the top shelf of our twelve-foot-high kitchen cupboards. Even though I did not understand the wonderful world of genetics, I learned to select appropriate seeds.

I also remember stringing a line of wheat-binding twine for a row marker, then taking the cultivator and making the trenches for the rows of seeds. My dad taught me to cover the seeds only as deep as the seed itself.

He always left a spot in one of the cornfields on a sandy ridge where we would plant the melons. He would take the hoe, and every two giant steps, dig the hole. It was my job to drop in two to three seeds. Then it was always a "long wait" until the first ripe melon. And believe me, there is nothing like taking your pocket knife to a field ripe melon and then sitting in the middle of the cornfield with dripping melon juice all over you.

It was my job to take my wagon and haul the ripe melons to the house, sometimes over a half mile. Production always exceeded our immediate need, so everyone who came for a visit always went home with several luscious melons.

John Wott is Director of Arboreta, Washington Park Arboretum.

John (age ten) took over the planting of the half-acre family vegetable garden at an early age. Here he is pictured with a harvest of muskmelon and watermelon to be shared.

Help WPA's Master Plan for Children's Education

WPA is dedicated to creating a comprehensive educational plan for people of all backgrounds and ages, interested in horticulture. In addition to using the natural resources of its 200 urban acres as a destination educational site, WPA continues to reach out into Puget Sound communities. Please share your thoughts on the following preliminary ideas for the master plan on children's education.

How can WPA better

- teach the principles of plant science and conservation, both at the Arboretum and in school and community curricula;
- continue being a community resource for all levels—from amateurs to professionals, who are looking for horticultural information, demonstrations, and skill development;
- become an outdoor laboratory for training future leaders of all ages, both in the academic and amateur horticultural communities;
- establish more community programs and on-site activities; and
- develop collections, gardens, and displays to demonstrate the biodiversity of its natural surroundings and incorporate these aspects into its educational efforts?

Do you have comments about children's horticultural education in WPA?

Call Dr. John Wott at 543-8800

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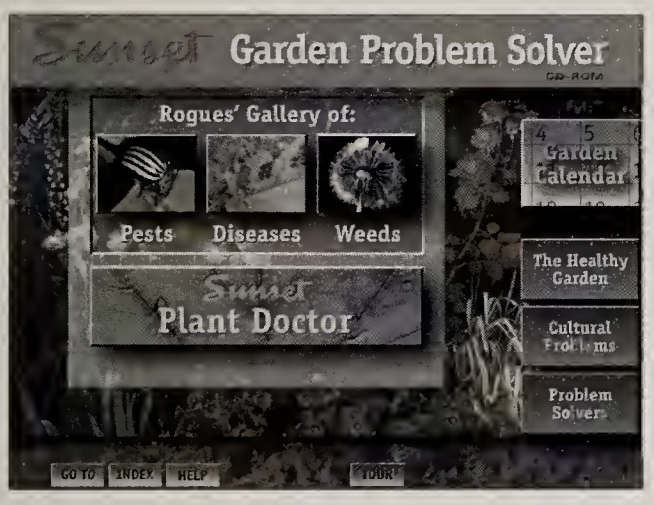

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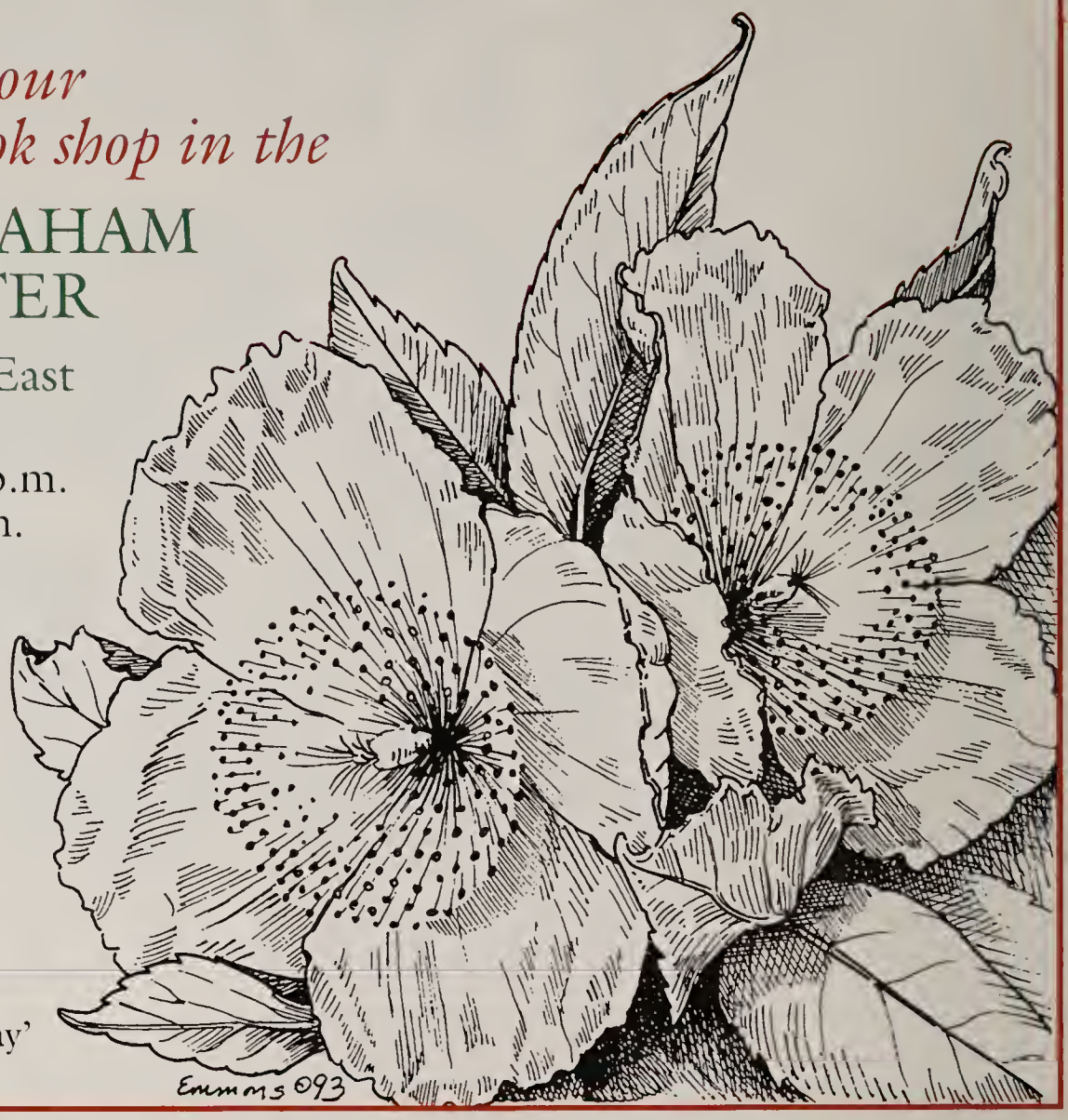

Eucryphia × *nymansensis* 'Nymansay'

WASHINGTON PARK
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